

To: McGartland, Al[McGartland.Al@epa.gov]; Massey, Matt[Massey.Matt@epa.gov]; Nagelhout, Peter[Nagelhout.Peter@epa.gov]; Simpson, David[Simpson.David@epa.gov]; Jenkins, Robin[Jenkins.Robin@epa.gov]; Sheriff, Glenn[Sheriff.Glenn@epa.gov]; Rees, Sarah[Rees.Sarah@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Johnson, Ann[Johnson.Ann@epa.gov]; Dockins, Chris[Dockins.Chris@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Balserak, Paul[Balserak.Paul@epa.gov]; Gilbreath, Jan[Gilbreath.Jan@epa.gov]; Cooperstein, Sharon[Cooperstein.Sharon@epa.gov]; Cristofaro, Alexander[Cristofaro.Alexander@epa.gov]; Walsh, Patrick[Walsh.Patrick@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Schillo, Bruce[Schillo.Bruce@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Morgan, Cynthia[Morgan.Cynthia@epa.gov]; Thundiyil, Karen[Thundiyil.Karen@epa.gov]; Klemick, Heather[Klemick.Heather@epa.gov]; Farber, Glenn[Farber.Glenn@epa.gov]; Simon, Nathalie[Simon.Nathalie@epa.gov]
Cc: Snyder, Brett[Snyder.Brett@epa.gov]; Miller, Kristen[Miller.Kristen@epa.gov]; Maguire, Kelly[Maguire.Kelly@epa.gov]
From: Bowen, Jennifer
Sent: Tue 4/21/2015 9:23:50 PM
Subject: RE: Bi-Weekly - Priority Regulations

Conference code

Meeting in 4144 West - or feel free to call in per the number above.

Proposed agenda includes updates on:

- **Non-Responsive**
- SCC
- **Non-Responsive**

-----Original Appointment-----

From: McGartland, Al

Sent: Wednesday, June 18, 2014 2:40 PM

To: McGartland, Al; Massey, Matt; Nagelhout, Peter; Simpson, David; Jenkins, Robin; Sheriff, Glenn; Rees, Sarah; Wolverton, Ann; Newbold, Steve; Johnson, Ann; Dockins, Chris; Kopits, Elizabeth; Balserak, Paul; Gilbreath, Jan; Cooperstein, Sharon; Cristofaro, Alexander; Walsh, Patrick; Nickerson, William; Schillo, Bruce; Marten, Alex; Evans, DavidA; Morgan, Cynthia; Thundiyil, Karen; Klemick, Heather; Farber, Glenn; Simon, Nathalie; Bowen, Jennifer

Cc: Snyder, Brett; Miller, Kristen; Maguire, Kelly

Subject: Bi-Weekly - Priority Regulations

Conference code

When: Wednesday, April 22, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Room 4144 WJC West Building

To: Barron, Alex[Barron.Alex@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Evans, DavidA
Sent: Fri 6/5/2015 4:40:11 PM
Subject: RE: Ria
[ch4a_benefits_appendix.docx](#)
[ch5_secondary_econ_impacts.docx](#)
[ch0_exec_summ.docx](#)
[ch4_benefits.docx](#)

I think ES, benefits chapter, and secondary impact/economy. The first is so you have a sense of what it looks like now, and to see if it triggers thoughts that you want to make sure are reflected in the uploaded version, but this version will definitely change. The latter two are sufficiently complete drafts ready for review, but I think Kate and Alex are working on updating the SCC values to reflect developments.

Obviously these won't be the most interesting to you, but they are the most ready. These are the ones I am taking home.

Alex, chime in if you think there are others to add to this list.

Dave

-----Original Message-----

From: Barron, Alex
Sent: Friday, June 05, 2015 12:25 PM
To: Evans, DavidA; Marten, Alex
Subject: Ria

Can one of you shoot me whatever chapters are worth reading so I can start review this weekend? I'd like to have Janet print them before she leaves.

Sent from my iPhone

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Barron, Alex[Barron.Alex@epa.gov]
From: Marten, Alex
Sent: Thur 6/4/2015 6:05:03 PM
Subject: RE: O&G NSPS

I think we should use the same strategy.

Non-Responsive

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Thursday, June 04, 2015 2:02 PM
To: Marten, Alex
Cc: Barron, Alex
Subject: Re: O&G NSPS

Thanks. So what's the plan with SCC/SCM on this one?

Ex 5

Ex 5

Looping in Alex B since I just wrote him an email about that one.

Ex. 5 - Deliberative

From: Marten, Alex
Sent: Thursday, June 4, 2015 1:58 PM
To: Kopits, Elizabeth
Subject: FW: O&G NSPS

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Beauvais, Joel
Sent: Wednesday, June 03, 2015 11:44 AM
To: Rees, Sarah; Balserak, Paul; Gilbreath, Jan; Marten, Alex
Subject: FW: O&G NSPS

Here it is

From: Goffman, Joseph
Sent: Wednesday, June 03, 2015 11:41 AM
To: Beauvais, Joel
Cc: Barron, Alex; McCabe, Janet
Subject: FW: O&G NSPS

Non-responsive

From: Friedman, Kristina
Sent: Wednesday, June 03, 2015 10:05 AM
To: McCabe, Janet; Goffman, Joseph
Cc: Stewart, Lori
Subject: O&G NSPS

Non-responsive

Thanks!
Kristina

Kristina Friedman

Office of Atmospheric Programs

U.S. Environmental Protection Agency

Phone: (202) 343-9281

To: Barron, Alex[Barron.Alex@epa.gov]; Gunning, Paul[Gunning.Paul@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]; Silverman, Steven[silverman.steven@epa.gov]; Kulschinsky, Edward[Kulschinsky.Edward@epa.gov]
From: Shouse, Kate
Sent: Thur 4/30/2015 12:21:46 PM
Subject: RE: Scc rtc
[response to SCC comments \(08 15 12\).docx](#)

The most recent RTC on SCC for a final rule is the 2017 light-duty vehicle rule. I've attached a Word version of the SCC section; they can also view the PDF online, <http://www.epa.gov/oms/climate/documents/420r12017.pdf> (see Section 18.4, pg 1239). Please let me know if you need anything else.

Thanks,
Kate

-----Original Message-----

From: Barron, Alex
Sent: Wednesday, April 29, 2015 7:57 PM
To: Shouse, Kate; Gunning, Paul; Fawcett, Allen
Cc: Marten, Alex; McGartland, Al; Silverman, Steven; Kulschinsky, Edward
Subject: Scc rtc

Paul and Kate and Allen - do you have a set of the most recent rtc's we did on scc issues in a final rule? It might be handy to share with some lawyers at doe.

Thanks,
a

Sent from my iPhone

To: Barron, Alex[Barron.Alex@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 1/22/2015 8:20:13 PM
Subject: RE: draft SCCSCM work timeline_1 22 15 ab.docx
[draft SCCSCM work timeline_1 22 15 ab ek.docx](#)

Thanks. I accepted all your changes, but have a few additional questions/edits. See attached.

Elizabeth

From: Barron, Alex
Sent: Thursday, January 22, 2015 2:19 PM
To: Kopits, Elizabeth; Marten, Alex
Cc: McGartland, Al
Subject: draft SCCSCM work timeline_1 22 15 ab.docx

This is close, thanks for doing this. Some thoughts on the attached.

To: Barron, Alex[Barron.Alex@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 1/22/2015 1:47:17 PM
Subject: draft SCC/SCM work timeline
[draft SCC,SCM work timeline 1.22.15.docx](#)

Hi Alex,

Here is a draft of the timeline we discussed yesterday. I know the format is boring but hopefully easy to follow. Is this along the lines of what you had in mind? Please let me know if anything is missing or if you need more/less detail on any items.

Thanks,

Elizabeth

To: Walsh, Ed[Walsh.Ed@epa.gov]
Cc: Blizzard, James[Blizzard.James@epa.gov]; Lewis, Josh[Lewis.Josh@epa.gov]; Al McGartland[McGartland.Al@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Roberts, Martha[Roberts.Martha@epa.gov]
From: Barron, Alex
Sent: Tue 6/23/2015 3:36:33 PM
Subject: RE: Social cost of carbon

Ed – This is my last day here and I am doing 100% records management. Elizabeth (cc'd) can help with background material and she and Al are good points of contact for future inquiries on this issue.

Two points:

- 1) SCC is an EOP led estimate so any responses to staff should probably keep OMB congressional folks in the loop.
- 2) As technical background, we could provide a link to the recent GAO report.

Alex

From: Walsh, Ed
Sent: Tuesday, June 23, 2015 11:27 AM
To: Barron, Alex
Cc: Blizzard, James; Lewis, Josh
Subject: Fw: Social cost of carbon

Hi Alex

We are preparing for the House to begin debate on our appropriation's Bill, and are beginning to receive question like the one below.

Can you please take a look and see if the question is something that OP can answer... we know SCC is bigger than OAR.

Thanks

Ed Walsh

From: Lewis, Josh
Sent: Tuesday, June 23, 2015 11:02 AM
To: Blizzard, James; Walsh, Ed
Subject: Fwd: Social cost of carbon

Hope one of you can take this one or direct it to the appropriate office. Thanks

Begin forwarded message:

From: "Gentile, Rachel" <Rachel.Gentile@mail.house.gov>
Date: June 23, 2015 at 10:52:34 AM EDT
To: "'Lewis.Josh@epa.gov'" <Lewis.Josh@epa.gov>
Subject: Social cost of carbon

Hi Josh:

I'm preparing remarks for my boss for the Interior-Environment approps bill: he and a few others will be defending the social cost of carbon.

I want to make sure he's ready for the arguments that it was developed by an "opaque, secretive process." It seems to me that the fact that it is all based upon peer reviewed scientific and economic studies, plus was developed by a team of 13 agencies negates that claim. However, I'd like to understand if EPA has addressed those concerns specifically (allowing for public comment, etc).

Also, I'm wondering if there are any good "success stories" so far with the social cost of carbon: has using it in rulemaking and decision making resulted in better decisions yet?

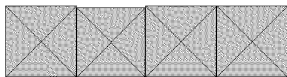
Rachel M. Gentile

Knauss Legislative Fellow | Congressman Alan Lowenthal, CA-47

108 Cannon House Office Building, Washington, DC 20515

Office: (202) 225-7924 | Fax: (202) 225-7926

Join the online conversation:



Click [here](#) for more legislative updates from Congressman Lowenthal

WE MOVED!! Please note that our office has been relocated to 108 CANNON.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex
(Marten.Alex@epa.gov)[Marten.Alex@epa.gov]
From: Barron, Alex
Sent: Mon 6/15/2015 2:47:24 PM
Subject: 2015 06 12 Desk statement and QA on use of Marten et al 2014 in RIAs ab.docx
2015 06 12 Desk statement and QA on use of Marten et al 2014 in RIAs ab.docx

To: Joel Beauvais[Beauvais.Joel@epa.gov]
Cc: Al McGartland[McGartland.Al@epa.gov]; Marten, Alex
(Marten.Alex@epa.gov)[Marten.Alex@epa.gov]
From: Barron, Alex
Sent: Tue 3/17/2015 10:11:20 PM
Subject: 2015 03 16 CH4 valuation next steps DRAFT3.docx
2015 03 16 CH4 valuation next steps DRAFT3.docx

In case it is of use.

Alex

To: Marten, Alex (Marten.Alex@epa.gov)[Marten.Alex@epa.gov]; Al
McGartland[McGartland.Al@epa.gov]
From: Barron, Alex
Sent: Thur 3/12/2015 4:04:16 PM
Subject: CH4 valuation next steps DRAFT.docx
[CH4 valuation next steps DRAFT.docx](#)

Any thoughts on this very, very draft document? Will bring some version to the meeting later today.

To: McGartland, Al[McGartland.Al@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Jenkins, Robin[Jenkins.Robin@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]
Cc: Bowen, Jennifer[Bowen.Jennifer@epa.gov]; Snyder, Brett[Snyder.Brett@epa.gov]
From: Simon, Nathalie
Sent: Sat 7/11/2015 12:09:42 PM
Subject: Review of Energy Efficiency paper by Fowlie et al.
[Summary of Fowlie Greenstone and Wolfram - Do Energy Efficiency Investments Deliver 071115.docx](#)
[Fowlie, Greenstone, and Wolfram - Do Energy Efficiency Investments Deliver.pdf](#)

Hi Al—

Attached is the review of the Energy Efficiency paper by Fowlie et al. that Charles and I have put together. I've also attached a copy of the paper itself so that you have everything in one place.

Non-Responsive

Please let us know if you have any questions or comments in the interim.

Thanks!

Nathalie

From: McGartland, Al
Sent: Monday, July 06, 2015 5:09 AM
To: Marten, Alex; Griffiths, Charles; Evans, DavidA; Simon, Nathalie; Kopits, Elizabeth; Wolverton, Ann; Ferris, Ann; Jenkins, Robin; Newbold, Steve
Cc: Bowen, Jennifer; Snyder, Brett
Subject: Re: Ee

+ Steve.

Sent from my iPhone

On Jul 3, 2015, at 6:04 PM, McGartland, Al <McGartland.Al@epa.gov> wrote:

Non-Responsive

Non-Responsive

Thoughts?

Sent from my iPhone

Begin forwarded message:

From: "Giles-AA, Cynthia" <Giles-AA.Cynthia@epa.gov>
Date: July 3, 2015 at 3:49:02 PM EDT
To: "McGartland, Al" <McGartland.Al@epa.gov>
Subject: Ee

Non-Responsive

Cc: Bowen, Jennifer[Bowen.Jennifer@epa.gov]; Snyder, Brett[Snyder.Brett@epa.gov]
To: McGartland, Al[McGartland.Al@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Simon, Nathalie[Simon.Nathalie@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Jenkins, Robin[Jenkins.Robin@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]
From: Griffiths, Charles
Sent: Mon 7/6/2015 11:47:13 AM
Subject: Re: Ee
[Allcott and Greenstone - Is there an Energy Efficiency Gap.pdf](#)
[Fowlie, Greenstone, and Wolfram - Are the Non-Monetary Costs of Energy Efficiency Investments Large.pdf](#)
[Fowlie, Greenstone, and Wolfram - Do Energy Efficiency Investments Deliver.pdf](#)

I am happy to review a paper. I assume we are talking about his recent work on weatherization with Meredith Fowlie and Cathrine Wolfram (although I included his older 2012 JEP piece on the EE gap, just in case you meant that). I found two recent weatherization articles, an AEA piece and a working paper. I have included both, but I'm guess you want us to look at the 2015 working paper, "Do Energy Efficiency Investments Deliver" right?

I thought I remember some DOE critiques being sent around, but now I can't find them. Does someone have them?

Charles

From: McGartland, Al
Sent: Monday, July 6, 2015 5:09 AM
To: Marten, Alex; Griffiths, Charles; Evans, DavidA; Simon, Nathalie; Kopits, Elizabeth; Wolverton, Ann; Ferris, Ann; Jenkins, Robin; Newbold, Steve
Cc: Bowen, Jennifer; Snyder, Brett
Subject: Re: Ee

+ Steve.

Sent from my iPhone

On Jul 3, 2015, at 6:04 PM, McGartland, Al <McGartland.Al@epa.gov> wrote:

Nathalie and Charles -- have you seen the new Michael greenstone study on energy efficiency Of kit in sure others in this email can provide. Based on email

Non-Responsive

I know that Alex David Elizabeth are too busy right now to do this. Let's discuss if any of you have time to do this. It might even be worth having someone give a presentation to the rest of us.

Thoughts?

Sent from my iPhone

Begin forwarded message:

From: "Giles-AA, Cynthia" <Giles-AA.Cynthia@epa.gov>

Date: July 3, 2015 at 3:49:02 PM EDT

To: "McGartland, Al" <McGartland.Al@epa.gov>

Subject: Ee

Non-Responsive

To: McGartland, Al[McGartland.Al@epa.gov]; Dockins, Chris[Dockins.Chris@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Wheeler, William[Wheeler.William@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Simon, Nathalie[Simon.Nathalie@epa.gov]
Cc: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Griffiths, Charles
Sent: Fri 1/23/2015 2:54:20 PM
Subject: RE: Discounting

Yes. Chris and I will be happy to put together a set of slides for discussion.

Charles

Charles Griffiths
National Center for Environmental Economics
Room 4334B, WJC West, Mail Code 1809T
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Phone: 202/566-2288 Fax: 202/566-2338
Email: griffiths.charles@epamail.epa.gov

From: McGartland, Al
Sent: Friday, January 23, 2015 9:46 AM
To: Dockins, Chris; Newbold, Steve; Wheeler, William; Wolverton, Ann; Griffiths, Charles; Simon, Nathalie
Cc: Kopits, Elizabeth; Marten, Alex
Subject: RE: Discounting

Hi everyone --- please do not feel pressure to attend this meeting. We have a meeting with Joel coming up and we could probably do this by email. The purpose of the meeting with Joel is to discuss what

Non-Responsive

Non-Responsive

It seems to me we have the following:

Non-Responsive

(2) The SCC discounting

Non-Responsive

Non-Responsive

Non-Responsive

Non-Responsive

Ex 5

We do not need to meet right now, but I do need some of you to contribute to a few briefing slides for Joel

Ex 5

We need a slide on the RFF workshop and Science paper;

Options.

-----Original Appointment-----

From: McGartland, Al

Sent: Thursday, January 22, 2015 6:26 PM

To: McGartland, Al; Dockins, Chris; Newbold, Steve; Wheeler, William; Wolverton, Ann; Griffiths, Charles; Simon, Nathalie

Cc: Kopits, Elizabeth; Marten, Alex

Subject: Discounting

When: Friday, January 23, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where:

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Mon 6/1/2015 1:55:18 AM
Subject: Tuesday oaqs scc briefing
[2015 02 11 SCC background briefing - tom burke.pptx](#)

Not sure exactly what OAQPS is looking for but this is the briefing deck we used for Tom Burke in February.

--

Alex Marten
marten.alex@epa.gov

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Thur 5/7/2015 3:59:05 PM
Subject: FW: O&G appendix on methane flaring

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Sarofim, Marcus
Sent: Tuesday, April 21, 2015 2:21 PM
To: Marten, Alex; Macpherson, Alex; Shouse, Kate
Subject: RE: O&G appendix on methane flaring

Non-Responsive

Non-Responsive

Non-Responsive

Ex 5

Ex 5

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch

From: Marten, Alex
Sent: Tuesday, April 21, 2015 2:08 PM
To: Macpherson, Alex; Shouse, Kate; Sarofim, Marcus

Subject: RE: O&G appendix on methane flaring

I was under the impression it was the same issue, but maybe I am missing something.

Non-Responsive

Non-Responsive

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Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Macpherson, Alex
Sent: Tuesday, April 21, 2015 1:49 PM
To: Shouse, Kate; Sarofim, Marcus; Marten, Alex
Subject: RE: O&G appendix on methane flaring

Non-Responsive

While I have y'all's attention...is this discussion relevant for landfills? I haven't been able to

Non-Responsive

Alex

From: Shouse, Kate
Sent: Tuesday, April 21, 2015 1:42 PM
To: Sarofim, Marcus; Marten, Alex
Cc: Macpherson, Alex

Subject: O&G appendix on methane flaring

Hi: I've started a rough draft of the appendix on methane flaring (pg 131) using language from

Non-Responsive

Along those lines, Alex and Marcus, please also take a look at Alex Macpherson's comment and chime in if you disagree with my response (pg 124).

Thanks!

Kate

To: Shouse, Kate[Shouse.Kate@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
From: Marten, Alex
Sent: Mon 7/13/2015 9:17:28 PM
Subject: RE: Peer Review of Social Cost of Methane Methodology
[whitepaper on ch4 valuation in bca - docket full.pdf](#)

Attached is what I had in mind for the single peer review document for the docket. Please take a look and see if this makes sense to you all.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, July 13, 2015 3:02 PM
To: Kopits, Elizabeth
Cc: Marten, Alex; McGartland, Al
Subject: RE: Peer Review of Social Cost of Methane Methodology

Sounds great and thanks, Alex, for creating the PDF. The person responsible for docketing varies by rulemaking but I will likely need to submit the SC-GHG items. Either way, sounds good to keep me posted and I'll make sure the right documents are submitted.

From: Kopits, Elizabeth
Sent: Monday, July 13, 2015 2:58 PM
To: Shouse, Kate
Cc: Marten, Alex; McGartland, Al
Subject: RE: Peer Review of Social Cost of Methane Methodology

Kate —

See below. Alex and I just discussed and he has kindly offered to turn the Marten et al peer review materials into one pdf file for purposes of including in the rule docket. The pdf file will

contain a title page, table of contents, the white paper, charge questions, and 3 peer reviewer responses. Not sure who actually puts these things in the docket but in case you hear anything about it via Hillary etc, be on the lookout for the file from Alex.

Thanks,

Elizabeth

From: Kopits, Elizabeth
Sent: Monday, July 13, 2015 2:37 PM
To: Marten, Alex; McGartland, Al
Subject: RE: Peer Review of Social Cost of Methane Methodology

Sorry, I forgot to turn it into a pdf.

From: Marten, Alex
Sent: Monday, July 13, 2015 2:37 PM
To: Kopits, Elizabeth; McGartland, Al
Subject: RE: Peer Review of Social Cost of Methane Methodology

Did somebody remember to turn Reilly's into a pdf before sending?

We should work on packaging them in a consistent format before they are released.

--

Alex L. Marten
phone: (202) 566-2301

email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Monday, July 13, 2015 1:55 PM
To: Marten, Alex; McGartland, Al
Subject: FW: Peer Review of Social Cost of Methane Methodology

FYI- per OMB's request, the Marten et al. peer reviews were transmitted to OMB in conjunction with interagency review of Landfill package.

Non-Responsive

Non-Responsive

Elizabeth

From: Ward, Hillary
Sent: Monday, July 13, 2015 1:51 PM
To: Kopits, Elizabeth
Cc: Shouse, Kate; Fulcher, Charles
Subject: RE: Peer Review of Social Cost of Methane Methodology

Confirming documents were transmitted w/ the message about the docket.

Regards,

Hillary Ward

US EPA, Sector Policies and Programs Division

Fuels and Incineration Group

(919)541-3154

From: Kopits, Elizabeth
Sent: Friday, July 10, 2015 12:22 PM

To: Ward, Hillary
Cc: Shouse, Kate; Fulcher, Charles
Subject: Fw: Peer Review of Social Cost of Methane Methodology

Hi Hillary,

Per our conversation, here are the 3 peer reviewer responses.

Non-Responsive

Non-Responsive

Thanks,

Elizabeth

To: Shouse, Kate[Shouse.Kate@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Mon 6/29/2015 1:31:12 PM
Subject: RE: SC-CH4 Discussion w/ OMB

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, June 29, 2015 9:28 AM
To: Kopits, Elizabeth; Marten, Alex
Subject: RE: SC-CH4 Discussion w/ OMB

Non-Responsive

Also, Allen and I are planning to bring Chikara, the PhD student interning with us this summer, to this meeting in your conference room. Let me know if space is tight, though.

Thanks

Kate

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:23 AM
To: Marten, Alex; Shouse, Kate

Subject: RE: SC-CH4 Discussion w/ OMB

I think we need to touch base with Joel again on this before it is up on the website. I will ask Nathalie to add it to tomorrow's biweekly agenda.

Have the reviews been shared with CEA or OMB? We received them right before I went on

Non-Responsive

From: Marten, Alex
Sent: Monday, June 29, 2015 9:17 AM
To: Kopits, Elizabeth; Shouse, Kate
Subject: RE: SC-CH4 Discussion w/ OMB

I have brought the OAR/SCC website option up to management multiple times and never received more than a shrug.

Ex 5

Ex 5

But I agree that we should put them in the docket also.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:15 AM
To: Shouse, Kate; Marten, Alex
Subject: RE: SC-CH4 Discussion w/ OMB

I think the current plan is just to put the full reviews in the landfill docket. Not sure our management is aware that they are going on OAR website. Perhaps we should discuss.

From: Shouse, Kate
Sent: Monday, June 29, 2015 9:14 AM
To: Marten, Alex
Cc: Kopits, Elizabeth
Subject: RE: SC-CH4 Discussion w/ OMB

Thanks, Alex. I think the slides look great, just wanted to check on our plans for releasing the letter reviews (of the Marten et al application). Will the OAR SCC website be the primary place for the reviews or are we going to post elsewhere (e.g., the Science Inventory database, OP's website)? Will also docket the reviews.

Thanks,
Kate

From: Marten, Alex
Sent: Saturday, June 27, 2015 4:27 PM
To: Macpherson, Alex; Shouse, Kate; Kopits, Elizabeth
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: Re: SC-CH4 Discussion w/ OMB

Thanks Alex. If others are going to take a look please use the attached. I added info on EPA's peer review of the application of the results to RIAs.

--

Alex Marten

marten.alex@epa.gov

From: Macpherson, Alex
Sent: Saturday, June 27, 2015 3:57 PM
To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth

Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

Seems good to me, Alex. No comments.

From: Marten, Alex
Sent: Friday, June 26, 2015 8:12 PM
To: Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

I thought it might be useful to have a couple slides to help guide Monday's conversation.

Given the timing of things I know that doesn't allow a lot of time for review, but please let me know if you have any comments or suggestions.

--

Alex L. Marten
phone: [\(202\) 566-2301](tel:(202)566-2301)
email: marten.alex@epa.gov

-----Original Appointment-----

From: Marten, Alex
Sent: Friday, June 26, 2015 4:51 PM
To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: SC-CH4 Discussion w/ OMB
When: Monday, June 29, 2015 12:00 PM-1:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWest4424G/OPEI

Conference code

Conference code

To: Shouse, Kate[Shouse.Kate@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Mon 6/29/2015 1:28:53 PM
Subject: RE: SC-CH4 Discussion w/ OMB

should be plenty of room.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, June 29, 2015 9:28 AM
To: Kopits, Elizabeth; Marten, Alex
Subject: RE: SC-CH4 Discussion w/ OMB

Non-Responsive

Also, Allen and I are planning to bring Chikara, the PhD student interning with us this summer, to this meeting in your conference room. Let me know if space is tight, though.

Thanks

Kate

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:23 AM
To: Marten, Alex; Shouse, Kate
Subject: RE: SC-CH4 Discussion w/ OMB

I think we need to touch base with Joel again on this before it is up on the website. I will ask Nathalie to add it to tomorrow's biweekly agenda.

Have the reviews been shared with CEA or OMB?

Non-Responsive

Non-Responsive

From: Marten, Alex
Sent: Monday, June 29, 2015 9:17 AM
To: Kopits, Elizabeth; Shouse, Kate
Subject: RE: SC-CH4 Discussion w/ OMB

I have brought the OAR/SCC website option up to management multiple times and never received more than a shrug.

Ex 5

Ex 5

But I agree that we should put them in the docket also.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:15 AM
To: Shouse, Kate; Marten, Alex
Subject: RE: SC-CH4 Discussion w/ OMB

I think the current plan is just to put the full reviews in the landfill docket. Not sure our management is aware that they are going on OAR website. Perhaps we should discuss.

From: Shouse, Kate
Sent: Monday, June 29, 2015 9:14 AM
To: Marten, Alex
Cc: Kopits, Elizabeth
Subject: RE: SC-CH4 Discussion w/ OMB

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Sent: Saturday, June 27, 2015 4:27 PM
To: Macpherson, Alex; Shouse, Kate; Kopits, Elizabeth
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: Re: SC-CH4 Discussion w/ OMB

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Alex Marten

marten.alex@epa.gov

From: Macpherson, Alex
Sent: Saturday, June 27, 2015 3:57 PM
To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

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Sent: Friday, June 26, 2015 8:12 PM
To: Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

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--

Alex L. Marten
phone: [\(202\) 566-2301](tel:(202)566-2301)
email: marten.alex@epa.gov

-----Original Appointment-----

From: Marten, Alex
Sent: Friday, June 26, 2015 4:51 PM
To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: SC-CH4 Discussion w/ OMB
When: Monday, June 29, 2015 12:00 PM-1:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomWest4424G/OPEI

Conference code

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Heninger, Brian
Sent: Fri 1/16/2015 6:15:15 PM
Subject: Peer Review of Social Cost of Methane Methodology
[methane_summary.pdf](#)
[methanedocument1_final, Fisher-Vanden.pdf](#)
[EPA Review \(1\).docx](#)
[Peer review of EPA SC-CH4 methodology Jan 15 2015.pdf](#)

....
>>>>
Hi Guys,

Personal Privacy I knew I really had to check in today to see if the SCM reviews arrived, especially after all the pushing to get it done quickly. I checked with the contractor/subcontractor yesterday (1/15) and they had received 2 of the 3 reviews. So I had them wait until the third arrived, which it did as scheduled yesterday - Yea! (-:

So, you should have 3 reviews (attached) plus a short summary by the contractor. Each review is formatted differently. I didn't bother retitling each file or anything yet.

1. John Reilly's review is in Word - (Generic title - "EPA Review 1")
2. Steve Rose's review is in PDF and labeled at the top. (Titled: "Peer Review of EPA Proposed Methodology...")
3. The Fisher-Vanden review (also PDF) looks like the Charge Question document what we sent them, but that is just because she used that as a starting point and added text right into that document. The title of the file has her name in it.

Please let me know if any of these 4 files does not come through properly. Also, please forward to others who you think should be included on this e-mail.

Thanks, -Brian

Brian Heninger
Economist / OP Quality Assurance Manager
U.S. Environmental Protection Agency
Office of the Administrator, Office of Policy (OP)
National Center for Environmental Economics
202-566-2270

**Whitepaper on Valuing Methane Emissions Changes in
Regulatory Benefit-Cost Analysis, Peer Review Charge
Questions, and Responses**

Table of Contents

Whitepaper: Valuing Methane Emissions Changes in Regulatory Benefit-Cost Analysis.....	3
Peer Review Charge Questions.....	13
Review: Karen Fisher-Vanden.....	15
Review: John Reilly.....	19
Review: Steven Rose.....	23

Valuing Methane Emission Changes in Regulatory Benefit-Cost Analysis

1. Introduction

While CO₂ is the primary source of anthropogenic greenhouse gas (GHG) emissions contributing to climate change, other GHGs such as methane (CH₄) are also important contributors.¹ The Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) concluded that in 2011 the increase in atmospheric CO₂ concentration since 1750 contributed 1.82 W m⁻² to global mean radiative forcing, or 64% of the total radiative forcing from well mixed GHGs, and the direct effect of increased atmospheric CH₄ accounted for 0.48 W m⁻², or 17% of total radiative forcing from well mixed GHGs (Myhre et al. 2013). In addition, CH₄ emissions have indirect impacts on the climate due to their role as a precursor for tropospheric ozone and stratospheric water vapor, both of which are potent GHGs. Accounting for these indirect effects and the role that emissions of other substances like NO_x and VOCs have on CH₄ atmospheric concentrations, AR5 estimated that historical anthropogenic emissions of CH₄ have contributed a total of 0.97 W m⁻² to global mean radiative forcing or almost a third of the radiative forcing resulting from emissions of well mixed GHGs. Therefore, CH₄ emissions are having, and will continue to have, a significant role on human well-being through their effect on the climate.

The United States Environmental Protection Agency (EPA) has promulgated several regulations that affect CH₄ emissions from a variety of sources. For example, the 2012 New Source Performance Standards and Amendments to the National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry are expected to reduce CH₄ emissions by 900,000 metric tons annually.² Additionally, the 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, promulgated jointly with the National Highway Traffic Safety Administration, is expected to reduce CH₄ emissions by over 100,000 metric tons in 2025 increasing to nearly 500,000 metric tons in 2050.³ It is likely that future EPA rulemakings will also impact CH₄ emissions.

Consistent with Executive Order 12866, EPA conducts benefit-cost analysis to inform policy makers and the public about the economic efficiency of regulatory actions. The value of benefit-cost analysis will, in part, be determined by the ability to quantify and monetize the relevant outcomes of the regulatory action under investigation in a scientifically and economically defensible manner. EPA has promulgated regulations that result in changes in CH₄ emissions but has not yet quantified such impacts in its main benefit-cost analyses. In sensitivity analyses EPA has considered the benefits of CH₄ emissions reductions by using the global warming potential (GWP) metric to convert CH₄ emissions into carbon dioxide (CO₂) equivalents which are then valued using the U.S. Government's (USG) social cost of carbon (SC-_{CO2})

¹ See EPA Endangerment Finding: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

² <http://www.gpo.gov/fdsys/pkg/FR-2012-08-16/pdf/2012-16806.pdf>

³ <http://www.gpo.gov/fdsys/pkg/FR-2012-10-15/pdf/2012-21972.pdf>

estimates.⁴ To date, EPA has not included these indirect CH₄ benefit approximations in the main benefit-cost analyses due to the well-documented caveats associated with the approach (discussed in Section 2). While some direct estimates of CH₄ emissions mitigation benefits have been presented in the scientific literature, EPA has not used them in benefit-cost analyses because they are inconsistent with USG estimates of the SC-CO₂ (discussed in Section 3).⁵

While it is anticipated that the USG will continue to improve the models and data it uses to estimate the SC-CO₂ in accordance with evolving scientific and economic understanding, this paper illustrates how EPA could apply the social cost of CH₄ (SC-CH₄) estimates developed in Marten et al. (2014) to improve upon the current treatment of methane impacts in regulatory analysis so that they need not be implicitly assigned a value of zero in USG policy assessment. Marten et al. provide the first set of published SC-CH₄ estimates that are consistent with the modeling assumptions underlying the USG SC-CO₂. This paper begins by describing the GWP-based approach to valuing CH₄ mitigation benefits on the margin and its limitations. This discussion is followed by a description of the direct approach to estimating the benefits of marginal CH₄ emissions reductions, including a summary of Marten et al. and a comparison of direct estimates to the GWP-based approach.

2. Global Warming Potential Approximation Approach

The global warming potential (GWP) for CH₄ is a measure of the additional energy retained by the Earth's atmosphere as the result of a pulse of CH₄ emissions as compared to a pulse of CO₂ emissions. Specifically, the GWP is the time-integrated global mean radiative forcing from one kg of CH₄ emissions compared to one kg of CO₂ emissions over a given time horizon, such that

$$GWP_{CH_4, T} = \frac{\int_0^T Q_{CH_4}(t) dt}{\int_0^T Q_{CO_2}(t) dt}, \quad (1)$$

where T is the time horizon and $Q_i(t)$ is the contribution to global mean radiative forcing at time t of a pulse of gas i at time zero. The time horizon is typically set to 100 years, but others have used alternative time horizons, such as 20 or 500 years, and the additional radiative forcing is estimated based on a constant background concentration for each gas.

The GWP was developed by the IPCC for their First Assessment Report (IPCC 1990) as a simple and purely physical metric to provide information about the potential impacts of each non-CO₂ GHG relative to CO₂ emissions. Under the Kyoto Protocol the GWP was designated for use in translating emissions of non-CO₂ GHGs into comparable CO₂ equivalents when estimating GHG sources and sinks.⁶ Similarly the United

⁴ The USG SC-CO₂ estimates are commonly referred to as the social cost of carbon but are consistent with a one metric ton change in CO₂ emissions.

⁵ Page 49536 <http://www.gpo.gov/fdsys/pkg/FR-2012-08-16/pdf/2012-16806.pdf>

⁶ Decision 2/CP.3 <http://unfccc.int/resource/docs/cop3/07a01.pdf#page=31>

Nations Framework Convention on Climate Change (UNFCCC) requires the use of GWPs with a time horizon of 100 years when calculating national GHG inventories.⁷

The GWPs for CH₄ as estimated by the IPCC for both the Fourth Assessment Report (AR4) and AR5 are presented in Table 1. The estimates presented in AR4 include both direct and indirect effects taking into account the feedback of CH₄ emissions on its own lifetime and an estimated 40% increase in the radiative efficacy of CH₄ emissions due to their role as a precursor for tropospheric ozone and stratospheric water vapor. The CH₄ GWP estimates presented in AR5 also include the indirect effects of CH₄ emissions, but the increase in radiative efficacy due to these effects was increased to 55% due to new findings on the role of CH₄ in stratospheric ozone formation. A reassessment of the effect of CH₄ on its own lifetime led to an increase in the effective perturbation lifetime from 12 years in AR4 to 12.4 years in AR5.

Table 1: Global Warming Potential for CH₄

Time Horizon	AR4 ⁹	AR5 ⁸	
		No CC Feedback	With CC Feedback
20	72	84	86
100	25	28	34
500	7.6	--	--

Starting in AR4 the IPCC included climate -carbon (CC) feedbacks in the estimate of the radiative forcing projection from the CO₂ emissions pulse. This feedback accounted for the weakening of carbon sinks from increases in the temperature. However, these feedbacks were not accounted for when estimating the additional mean global radiative forcing due to a non-CO₂ emissions pulse, which would also have an effect on temperature, and in turn carbon sinks. Therefore in AR5 the IPCC presented estimates both with and without the additional radiative forcing from the CC feedback associated with non-CO₂ emissions. Inclusion of CC feedbacks in calculating the GWP for CH₄ increases the estimate from 28 to 34 for a 100 year time horizon.

2.1 Application of GWP-Based Approach to Benefit-Cost Analysis

The SC-CO₂ is an estimate of the monetized damages associated with an incremental increase in CO₂ emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services. As such, the SC-CO₂ is an estimate of the benefits of reducing CO₂ emissions at the margin. The USG first published SC-CO₂ estimates in 2010 following an inter agency process that included EPA and other executive branch entities. The USG used three integrated assessment models (IAM) to develop SC-CO₂ estimates and selected four global values for use in regulatory analyses. The USG recently updated these estimates using new versions of each IAM and published them in 2013. The 2013 update did not

⁷ http://unfccc.int/ghg_data/online_help/definitions/items/3817.php

⁸ Source: Table 8.7 in Myhre et al. (2013).

⁹ Source: Table 2.14 in Forster et al. (2007).

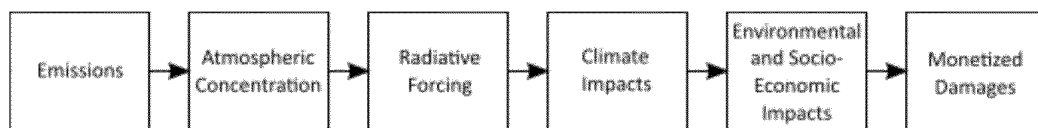
revisit the 2010 modeling decisions (e.g., discount rates, reference case socioeconomic and emission scenarios, or equilibrium climate sensitivity). Rather, updates were confined to those IAM modifications that were implemented by the model developers themselves and subsequently used in the peer-reviewed literature. The February 2010 Technical Support Document (TSD)¹⁰ provides a complete discussion of the methods used to develop the USG SC-CO₂ estimates and the November 2013 TSD¹¹ presents and discusses the updated estimates.

The USG has not developed an estimate of the social cost of CH₄ emissions for use in regulatory analysis. As a result benefit-cost analyses informing U.S. federal rulemakings have not fully considered the benefits associated with CH₄ emissions mitigation. To understand the potential implication of these omissions, EPA has conducted sensitivity analysis in some of its regulatory analyses using the 100-year GWP to convert CH₄ emission reductions to CO₂-equivalents, which are then valued using the SC-CO₂. This approach approximates the social cost of methane (SC-CH₄) using the SC-CO₂ and the GWP, such that

$$SC-CH_4 \approx GWP_{100} \times SC-CO_2 . \quad (2)$$

2.2 Limitations of the Global Warming Potential Approach for Valuing CH₄ Emissions Changes

The GWP is a simple, transparent, and well-established metric for assessing the relative impacts of non-CO₂ emissions compared to CO₂ on a purely physical basis. However, the GWP-based approximation of the SC-CH₄ in (2) has several well-documented limitations (e.g., Reilly and Richards 1993; Schmalensee 1993; Fankhauser 1994; Marten and Newbold 2012). Gas comparison metrics, such as the GWP, are designed to measure the impact of non-CO₂ GHG emissions relative to CO₂ at a specific point along the pathway from emissions to monetized damages (depicted in Figure 1), and this point may differ across measures. The GWP measures the cumulative radiative forcing from a perturbation of a non-CO₂ GHG relative to a perturbation of CO₂ over a fixed time horizon. The GWP and other gas comparison metrics are not ideally suited for use in benefit-cost analyses to approximate the social cost of non-CO₂ GHGs because they ignore important nonlinear relationships beyond radiative forcing in the chain between emissions and damages. These can become relevant because gases have different lifetimes. For example, the SC-CO₂ takes into account the fact that marginal damages from an increase in temperature are a function of existing temperature levels. Another limitation of gas comparison metrics for this purpose is that some environmental and socioeconomic impacts are not linked to all of the gases under consideration and will therefore be incorrectly allocated. For example, the economic impacts associated with increased agricultural productivity due to higher atmospheric CO₂ concentrations included in the SC-CO₂ would be incorrectly allocated to CH₄ emissions with the GWP-based valuation approach.



¹⁰ <http://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>

¹¹ <http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>

Figure 1: Path from GHG Emissions to Monetized Damages (Source: Marten et al. (2014))

Furthermore, the assumptions made in estimating the GWP are not consistent with the assumptions underlying SC-CO₂ estimates in general, including the USG SC-CO₂ estimates. For example the 100 year time horizon usually used in estimating the GWP is less than the 300 year horizon used in developing the USG SC-CO₂ estimates. The GWP -approach also treats all impacts within the time horizon equally, independent of the time at which they occur. This is inconsistent with the role of discounting in economic analysis, which accounts for a basic preference for earlier over later gains in utility, the small but positive probability of a large global catastrophe (e.g., large asteroid collision, super volcanic eruption, nuclear war), and expectations regarding future levels of economic growth. In the case of CH₄, which has a relatively short lifetime compared to CO₂, the temporal independence of the GWP could lead the approximation in (2) to underestimate the SC-CH₄ with a larger downward bias under higher discount rates (Marten and Newbold 2012).¹²

3. Direct Estimation

The SC-CH₄ can be directly estimated using an integrated assessment model (IAM) similar to the way in which the SC-CO₂ is estimated. IAMs couple simplified models of atmospheric gas cycles and climate systems with highly aggregated models of the global economy and human behavior to represent the impacts of GHG emissions on the climate and human welfare. Within IAMs, the equations that represent the influence of emissions on the climate are based on scientific assessments, while the equations that map climate impacts to human welfare are based on economic research that has studied the effects of climate on various market and non-market sectors. Estimating the social cost of emissions for a given GHG at the margin involves perturbing the emissions of that gas in a given year and forecasting the increase in monetized climate damages relative to the baseline. These incremental damages are then discounted back to the perturbation year to represent the marginal social cost of emissions of the specific GHG in that year.

Several researchers have directly estimated the social cost of CH₄ emissions using IAMs, though the number of such estimates is small compared to the large number of SC-CO₂ estimates available in the literature. Among these published direct estimates there is considerable variation in the models and input assumptions. These studies differ in the emission perturbation year, employ a wide range of constant and variable discount rate specifications, and consider a range of baseline socioeconomic and emissions scenarios that have been developed over the last 20 years. However, as discussed by Marten et al. (2014), none of the other published estimates of the SC-CH₄ are consistent with the USG SC-CO₂ estimates, and most are likely underestimates due to changes in the underlying science since their publication. Therefore, Marten et al. provide the first set of direct estimates of the SC-CH₄ that are consistent with the USG SC-CO₂ estimates.

¹² We note that the truncation of the time period in the GWP calculation could lead to an overestimate of SC-CH₄ for near term perturbation years in cases where the SC-CO₂ is based on a sufficiently low or steeply declining discount rate.

The estimation approach of Marten et al. (2014) used the same set of three IAMs, five socioeconomic - emissions scenarios, equilibrium climate sensitivity distribution, and three constant discount rates used to develop the USG SC-CO₂ estimates. Marten et al. also used the same aggregation method as the USG SC-CO₂ to distill the 45 distribution of the SC-CH₄ produced for each emissions year into four estimates : the mean across all models and scenarios using a 2.5%, 3%, and 5% discount rate, and the 95th percentile of the pooled estimates from all models and scenarios using a 3% discount rate.

The primary modeling challenge addressed by Marten et al. (2014) is that two of the three IAMs as implemented by the USG are not “turn -key” ready to estimate the SC -CH₄ due to their lack of an atmospheric stock-flow model of CH₄ emissions and their influence on global mean radiative forcing. Instead, two of the three model implementations use exogenous projection of aggregate non-CO₂ radiative forcing, which prevents the direct perturbation of CH₄ emissions within the models. Therefore, to estimate the SC-CH₄ Marten et al. applied a simple model to estimate the path of additional radiative forcing from a CH₄ perturbation, which is then added to the exogenous non -CO₂ radiative forcing projection to estimate the incremental damages compared to the baseline.

The simple model applied by Marten et al. (2014) used an exponential decay function to project atmospheric CH₄ concentrations from the CH₄ emissions projections in the five socioeconomic-emissions scenarios. They set the average lifetime of CH₄ to 12 years following the findings of the IPCC in AR4. The direct radiative forcing associated with the atmospheric CH₄ concentration was estimated using the functional relationships presented in the IPCC’s Third Assessment Report and used in AR4. To account for the indirect effects of CH₄ as a precursor for tropospheric ozone and stratospheric water vapor, Marten et al. followed the approach of the IPCC in AR4 of increasing the direct radiative forcing by 40%.

The USG SC-CO₂ modeling exercise assumed that overall radiative forcing from non-CO₂ sources remains constant past 2100 without specifying the projections for individual GHGs that were implicit in that assumption. This broad assumption was sufficient for the purposes of the USG in estimating the SC -CO₂; however, estimating the SC-CH₄ requires explicit projections of baseline CH₄ emissions to determine the atmospheric concentration and radiative forcing off of which to compare the perturbation. Marten et al. (2014) chose to interpret the USG SC-CO₂ assumption for non-CO₂ radiative forcing past 2100 as applying to each gas individually, such that the emissions of each gas fall to their respective rate of atmospheric decay. This has the effect of holding global mean radiative forcing due to atmospheric CH₄ constant past 2100. Marten et al. showed that, due to the relatively short lifetime of CH₄, alternative methods for extrapolating CH₄ emissions past 2100 have only a negligible effect (less than 0.5%) on the SC-CH₄.

The SC-CH₄ estimates developed by Marten et al. (2014) are presented in Table 2 along with the USG SC-CO₂ estimates. For more detailed results and a comparison to other published estimates we refer the reader to the discussion in Marten et al.

Table 2: SC-CO₂ and SC-CH₄ Estimates [2007\$ per metric ton] (Source: Marten et al. (2014))

Year	SC-CO ₂				SC-CH ₄			
	5.0% Mean	3.0% Mean	2.5% Mean	3% 95 th	5.0% Mean	3.0% Mean	2.5% Mean	3% 95 th
2010	11	32	51	89	370	870	1,200	2,500
2015	11	37	57	109	460	1,100	1,400	2,900
2020	12	43	64	128	550	1,200	1,600	3,200
2025	14	47	69	143	660	1,400	1,800	3,800
2030	16	52	75	159	780	1,600	2,100	4,300
2035	19	56	80	175	920	1,900	2,300	5,000
2040	21	61	86	191	1,100	2,100	2,600	5,600
2045	24	66	92	206	1,200	2,300	2,900	6,300
2050	26	71	97	220	1,400	2,500	3,100	6,900

3.1 Application of Direct Estimates to Benefit-Cost Analysis

The application of direct estimates from Marten et al.(2014) to benefit-cost analysis of a regulatory action is analogous to the use of the SC-CO₂ estimates. Specifically, the direct estimates would be used to value decreases in CH₄ emissions anticipated from the rulemaking. Forecast reductions in CH₄ emissions in a given year resulting from the regulatory action are multiplied by the SC -CH₄ estimate based on a perturbation in that year. To obtain a present value estimate, the monetized stream of future CH₄ benefits are discounted back to the analysis year using the same discount rate used to estimate the SC -CH₄. Specifically, the present value of benefits from a regulatory action leading to reductions in CH₄ emissions ΔE_t , $t = 0, \dots, H$, is

$$\sum_{t=0}^H \Delta E_t \times SC-CH_{4,t} \times (1+r)^{-t}, \quad (3)$$

where r is the discount rate used to estimate the SC -CH₄. The SC-CH₄ estimates would be applied in the same way to calculate CH₄ dis-benefits of a rulemaking that leads to an increase in CH₄ emissions.

3.2 Comparison with the Global Warming Approach

The Marten et al. (2014) estimates are based on the conclusions presented in AR4, which was the latest assessment available when they conducted their modeling and analysis, and therefore GWP estimates based on the same assumptions would provide the most consistent comparison. As noted in Table 1, the AR4 100-year GWP for CH₄ is 25. However, based on the direct estimates in Table 2 the social cost of CH₄ emissions in 2020 are 25-46 times higher than for CO₂ depending on the discount rate. For emissions in 2050 the SC-CH₄ is 31-54 times higher than the SC-CO₂. Therefore the GWP-based approach to estimating

the value of CH₄ emissions based on the SC-CO₂ will likely provide an underestimate particularly for higher discount rates and future emissions years in this application.

To illustrate the difference between the direct SC-CH₄ and GWP-based estimates, Table 3 recalculates the methane co-benefits of the EPA 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards¹³ using both the Marten et al. (2014) SC-CH₄ estimates and the GWP-based approach. The GWP-based approach underestimates the climate co-benefits of the expected methane emission reductions by 14% to 50% depending on the discount rate assumption.

Table 3. Methane Co-benefits of 2017-2025 Light Duty Vehicle GHG Standards Using Alternative Valuation Methodologies [Billion 2007\$]¹⁴

USG Discount rate assumption	Using Marten et al. (2014) SC-CH ₄	GWP-Based Approach (AR4 100 Year)	% Difference
5% Mean	2.5	1.2	- 50%
3% Mean	8.1	6.1	- 26%
2.5% Mean	11.6	9.7	- 16%
3% 95 th percentile	21.9	18.8	- 14%

It should be noted that since the Marten et al. (2014) estimates are based on the IPCC AR4 conclusions, in some cases the GWP-based approach using AR5 100-year GWP estimates would yield higher benefits than the current Marten et al. estimates. This occurs for low discount rates and emissions years in the near term and is due to the higher CH₄ indirect effects and climate-carbon feedbacks included in the AR5 GWP estimates. As such, the estimates of Marten et al., by being based on AR4, may be considered conservative in these regards. The inclusion of new AR5 findings in the approach of Marten et al. is expected to increase the SC-CH₄ estimates, and the relative difference between those updated estimates and the GWP-based approach using the AR5 100-year GWP are expected to be similar to those discussed above.

4. Valuing Other Non-CO₂ GHG Emissions

While this white paper focuses on methane, the valuation of other non-CO₂ GHG emissions is relevant to EPA regulatory analyses and remains an ongoing area of research. At least one promulgated rulemaking to date, the 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards, has been expected to reduce other non-CO₂ GHG emissions, specifically N₂O and HFC-134a. Marten et al. (2014) provides an analysis of the SC-N₂O parallel to their SC-CH₄ analysis. They use the same methodology described for SC-CH₄, replacing the simple CH₄ atmospheric gas cycle model with a simple N₂O atmospheric cycle, and found the directly modeled SC-N₂O estimates generally exceed those from the GWP-based approach.

¹³ <http://www.gpo.gov/fdsys/pkg/FR-2012-10-15/pdf/2012-21972.pdf>

¹⁴ NPV of climate benefits resulting from 2017-2050 CH₄ emission reductions, discounted back to 2012. See RIA, Table 7.1-4, <http://www.epa.gov/otaq/climate/documents/420r12016.pdf>.

Their estimates of the SC-N₂O are also consistent with the USG SC-CO₂ estimates and therefore, could also be used to improve the analysis of regulatory actions projected to influence N₂O emissions.

EPA currently does not have directly modeled estimates of the social cost of Fgases, which include a wide variety of gases spanning a broad range of atmospheric lifetimes and climate impacts. It is difficult to determine how directly modeled estimates of SC-F gases would compare to estimates from the GWP - based approach, given the limited number of published estimates at the moment and diversity of gases in this category.

5. Concluding Remarks

As directed by Executive Orders 12866 and 13563, EPA must use the best available scientific, technical, economic, and other information to quantify the costs and benefits of regulatory actions. Rigorous evaluation of costs and benefits has been a core tenet of the EPA rulemaking process for decades. Due to limitations of the GWP-based approach to value GHG emission impacts and the previous lack of peer-reviewed SC-CH₄ estimates consistent with the USG SC-CO₂ modeling assumptions, EPA has only monetized the benefits of CH₄ emissions mitigation in sensitivity analysis. However, Marten et al. (2014) now provides a set of published SC-CH₄ estimates consistent with the USG SC-CO₂ modeling exercise. As such, the Marten et al. estimates offer a method for improving the analyses of regulatory actions that are projected to influence CH₄ emissions without introducing inconsistency with the manner in which other CO₂ mitigation benefits are valued. These estimates can and should be updated if and when the modeling assumptions underlying the USG SC-CO₂ estimates are updated to reflect the conclusions of IPCC AR5 or other evolving scientific and economic knowledge.¹⁵

¹⁵ The Office of Management and Budget (OMB) recently provided an opportunity for public comment on the updated November 2013 USG SC-CO₂ TSD, in addition to the public comment opportunities available through particular rulemakings. OMB is currently reviewing the comments received. Any revision to the underlying modeling assumptions will be addressed separately as the SC-CO₂ estimates are updated.

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Document Title: Valuing Methane Emission Changes in Regulatory Benefit-Cost Analysis

Approximate Length: 10 pages

Supporting Materials: Marten et al. (2014) (36 pages excluding Appendices)

Abstract and Charge Questions:

Consistent with Executive Order 12866, EPA conducts benefit-cost analysis to inform policy makers and the public about the potential economic implications of regulatory actions. EPA has promulgated regulations that result in changes in CH₄ emissions but has not yet quantified such impacts in its main benefit-cost analyses. Direct estimates of the benefits of mitigating CH₄ emissions have been presented in the scientific literature, but EPA has not used these estimates in benefit-cost analyses because they are inconsistent with U.S. Government (USG) estimates of the social cost of carbon dioxide (SC-CO₂).¹⁶ A recently published paper (Marten et al. 2014) presents estimates of the social cost of CH₄ (SC-CH₄) that are consistent with USG estimates of the SC-CO₂. While it is anticipated that the USG will continue to improve the models and data it uses to estimate the SC-CO₂ in accordance with evolving scientific and economic understanding, the enclosed paper illustrates how EPA could apply the SC-CH₄ estimates from Marten et al. to improve upon the current treatment of methane impacts in regulatory impact analysis (RIA) so that they need not be implicitly assigned a value of zero in policy assessment. Consistent with EPA's peer review guidance, the Agency is seeking review of the application of these new benefit estimates to regulatory analysis before using them in an RIA. Specifically we seek guidance on the following questions:

1. Has EPA correctly interpreted the SC-CH₄ estimates provided in Marten et al. (2014) as designed to measure the monetized value of the climate impacts from marginal changes in CH₄ emissions in a way that is appropriate for use in benefit-cost analysis of regulatory actions projected to change CH₄ emissions?
2. Do you agree that the Marten et al. SC-CH₄ estimates are consistent with the USG SC-CO₂ estimates?
3. Do you agree with EPA's characterization of the limitations of using the global warming potential (GWP) to approximate the SC-CH₄ (and other non-CO₂ GHGs)?
4. Do you agree with EPA's assessment that direct estimates of the SC-CH₄, as developed by Marten et al., are more appropriate for monetizing changes in CH₄ emissions than using the GWP to scale the USG SC-CO₂?

¹⁶ See the February 2010 Technical Support Document (TSD) and November 2013 TSD Update for a complete discussion of the methods used to develop the USG SC-CO₂ estimates:
<http://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>,
<http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>.

5. Are there other existing approaches for monetizing the benefits (or dis-benefits) to society from reductions (increases) in CH₄ emissions that should be considered in regulatory analysis?
6. Although the focus of this review is on the application of estimates of the social cost of CH₄ to benefit-cost analysis for regulations, do your answers for the questions above hold for the application of the social cost of N₂O estimates provided in Marten et al.?
7. Are there implementation issues not addressed in the paper that EPA should consider before applying the Marten et al. estimates in regulatory analysis?

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1. Has EPA correctly interpreted the SC-CH₄ estimates provided in Marten et al. (2014) as designed to measure the monetized value of the climate impacts from marginal changes in CH₄ emissions in a way that is appropriate for use in benefit-cost analysis of regulatory actions projected to change CH₄ emissions?

I have read both Marten et al. (2014) and the review document and feel that the review document provides an accurate summary of the issues and methodologies discussed in Marten et al. (2014). I feel that Table 3 of the review document provides a nice example of how the SC-CH₄ estimates from Marten et al. (2014) could be used in BCAs of proposed regulations and underscores the bias that arises if a GWP-based approach is used rather than the direct approach proposed by Marten et al. (2014).

There, of course, is a whole host of issues that arise when applying any social cost measure to regulatory analyses, which have been extensively discussed in the literature

¹ See the February 2010 Technical Support Document (TSD) and November 2013 TSD Update for a complete discussion of the methods used to develop the USG SC-CO₂ estimates:
<http://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>,
<http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>.

and which I expand on in my responses below. A key issue that I would like to raise here is that these measures are only appropriate for marginal changes in CH₄. These measures are not designed to be used to evaluate non-marginal changes in methane emissions (or any other gas, for that matter). Therefore, caution must be used when applying social cost measures like this.

2. Do you agree that the Marten et al. SC-CH₄ estimates are consistent with the USG SC-CO₂ estimates?

“Consistent” can have many interpretations. I will say that the Marten et al. SC-CH₄ estimates are computed in a similar way as the SC-CO₂ estimates, so in this regard, the two estimates are “consistent.” However, CO₂ is more explicitly modeled in the three models than CH₄ so in this regard they are not “consistent.” However, this inconsistency is due to limitations of the models and I feel that Marten et al. have taken appropriate steps to address these limitations the best way possible. However, gaps still remain and should be recognized.

3. Do you agree with EPA’s characterization of the limitations of using the global warming potential (GWP) to approximate the SC-CH₄ (and other non-CO₂ GHGs)?

The review document (and Marten et al) discusses a number of problems that arise when GWP is used to approximate SC-CH₄: (1) in the introduction and in section 2, the authors point out that the indirect effects of CH₄, as a precursor to tropospheric ozone and stratospheric water vapor, can amplify radiative forcing significantly (which would not be captured in the GWP); (2) GWP ignores important nonlinear relationships beyond radiative forcing in the chain between emissions and damages—e.g., increased agricultural productivity due to CO₂ fertilization would be incorrectly attributed to CH₄ if the GWP was used; (3) GWP does not account for differences in time horizons between gases—e.g., since CH₄ has a shorter lifetime than CO₂, the GWP approach would underestimate the SC-CH₄.

Although all three are technically correct, I feel that (1) and (2) could be addressed to a certain extent (although not perfectly) by adjusting the GWP to account for these biases. However, the temporal issue raised in (3) seems more difficult to address through simple adjustments to the GWP.

In sum, I agree with the authors that problems exist and that the direct approach in theory is the best way to avoid these issues.

4. Do you agree with EPA’s assessment that direct estimates of the SC-CH₄, as developed by Marten et al., are more appropriate for monetizing changes in CH₄ emissions than using the GWP to scale the USG SC-CO₂?

As discussed in my response to question 3 above, I agree that the direct approach is likely a superior approach to the indirect GWP approach. However, it should be noted that the direct approach has issues as well. Namely, as discussed in section 3, most models do not include an atmospheric stock-flow model of CH₄; thus, the authors were forced to develop a separate model to project the path of radiative forcing from a CH₄ perturbation, and then incorporate this path into the IAM exogenously. As a result, indirect or feedback effects are missed. For instance, climate change impacts on agriculture will affect methane emissions.

In sum, no approach is perfect but in my opinion, the “direct” approach used by Marten et al is preferred to the indirect GWP approach for the reasons outlined in the review document. However, the EPA should continue to seek improvements to the direct approach put forth by Marten et al.

5. Are there other existing approaches for monetizing the benefits (or dis-benefits) to society from reductions (increases) in CH₄ emissions that should be considered in regulatory analysis?

My complaint with past SC measures is the use of highly aggregated and stylized models to monetize the benefits of reductions. By using models that represent the global economy as one aggregate sector, we are missing important subsector interactions and distributional effects that can only be captured with a more disaggregated model, such as a computable general equilibrium model. My sense would be that these SC would be much higher if a more disaggregated model was used. Modeling the economy as one monolithic sector implies, for instance, perfect substitutability across subsectors which will underestimate the cost of damages. It also assumes perfect trade which can also underestimate the cost of damages. (See Chapter 6 of the IPCC WGIII Fifth Assessment Report which highlights some of these biases that arise with alternative model characteristics).

The use of these simplified models for SC estimates, I believe, is a large source of the criticisms we’ve seen with respect to the SCC reports. The use of more sophisticated economic models (like those used in the IPCC) is needed, in my opinion.

6. Although the focus of this review is on the application of estimates of the social cost of CH₄ to benefit-cost analysis for regulations, do your answers for the questions above hold for the application of the social cost of N₂O estimates provided in Marten et al.?

Yes.

7. Are there implementation issues not addressed in the paper that EPA should consider before applying the Marten et al. estimates in regulatory analysis?

I am not sure I would characterize these as “implementation” issues, but I do want to take this opportunity to stress the importance of being forthcoming with the shortcomings of these SC estimates. These shortcomings are not specific to any gas.

- (1) As discussed in my response to question 1, these estimates are not appropriate for evaluating large (non-marginal) changes in emissions of any of these gases.*
- (2) As discussed in my response to question 5, the SC values will be underestimated due to the use of highly aggregated models.*
- (3) These estimates do not take into account extreme or threshold events, which could amplify the estimates significantly.*
- (4) These estimates will be biased downward due to the omissions of nonmarket values and omitted impacts, and will be biased upward due to the lack of adaptation responses (although FUND does account for some of this).*

This report is a response to a request from Katherine Kiel (Dec. 10, 2014) to review a draft EPA (no date) paper, "Valuing Methane Emission Changes in Regulatory Benefit-Cost Analysis." As part of the request I was provided with the 7 charge questions repeated below in italics, the EPA paper, and the paper: Alex L. Marten, Elizabeth A. Kopits, Charles W. Griffiths, Stephen C. Newbold, and Ann Wolverton, 2014 (on line) Incremental C₄H and N₂O mitigation benefits consistent with the US Government's SC-CO₂ Estimates, *Climate Policy*, which forms the basis for estimates provided in the draft EPA paper.

The basic objective of the EPA paper was to outline a process for establishing a social cost of methane (and possibly N₂O) that is consistent with the established basis for estimating a social cost of carbon previously developed by EPA.

1. *Has EPA correctly interpreted the SC-CH₄ estimates provided in Marten et al. (2014) as designed to measure the monetized value of the climate impacts from marginal changes in CH₄ emissions in a way that is appropriate for use in benefit-cost analysis of regulatory actions projected to change CH₄ emissions?*

The Marten et al. (2014) paper follows closely the original social cost of carbon approach developed by the EPA, using the same 3 IA models, expanding them to include methane and nitrous oxide. EPA's interpretation of the paper appears to be correct. The main addition was an explicit treatment of the lifetime of methane (and nitrous oxide). The formulation used is obviously a simplification of complex atmospheric chemistry but has been used in earlier publications and likely approximates a more complex representation. The *ad hoc* increase in radiative forcing to account for indirect effects is another simplification, and obviously has substantial impacts on the estimates. It is justified by the IPCC indirect estimates. It is not clear that the method includes the fact that abiogenic methane decays into CO₂ and hence may represent an additional impact of methane release. (Biogenic methane also decays into CO₂ but if that methane is derived from plant material that regrows it would then not represent an addition of CO₂ to the atmosphere.)

2. *Do you agree that the Marten et al. SC-CH₄ estimates are consistent with the USG SC-CO₂ estimates?*

While there is considerable controversy about how to estimate a Social Cost of Carbon from a theoretical standpoint as well as the empirical foundation for such an estimate, the method put forward by Marten et al. (2014) is theoretically and empirically consistent with the original Social Cost of Carbon estimates developed by EPA.

3. *Do you agree with EPA's characterization of the limitations of using the global warming potential (GWP) to approximate the SC-CH₄ (and other non-CO₂ GHGs)?*

I agree that using GWP's to scale the social cost of carbon would be theoretically inconsistent. As the EPA (no date) paper discusses, the Social Cost of Carbon method appropriately uses a discount rate to weight damages at different points in time, whereas the GWP approach stops at radiative forcing and then uses an arbitrary time horizon to truncate the effects, weighting effects in each year equally. This leads to the controversy about which GWP time horizon to use. Of course this controversy is not completely avoided as it resurfaces as a controversy about the appropriate discount rate. It appears to turn out that given the time path of damages the 100-year GWP of methane is very similar to the Social Cost of Methane relative to the Social Cost of Carbon as estimated in the Marten et al (2014) paper. (This was a conclusion Reilly and Richards (1993) reached.) With a very different path of damages this result may not hold. For that reason as EPA imagines updating these estimates, and for theoretical consistency, using the Marten et al. (2014) method for arriving at a Social Cost of methane (or nitrous oxide) appears much more defensible.

While it does not affect the basic conclusions, I have some issues with the paragraph in EPA (no date) repeated below in italics, especially the sentences highlighted here in bold.

*Furthermore, the assumptions made in estimating the GWP are not consistent with the assumptions underlying SC -CO₂ estimates in general, including the USG SC -CO₂ estimates. **For example the 100 year time horizon usually used in estimating the GWP is less than the 300 year horizon used in developing the USG SC -CO₂ estimates.** The GWP-approach also treats all impacts within the time horizon equally, independent of the time at which they occur. **This is inconsistent with the role of discounting in economic analysis, which accounts for a basic preference for earlier over later gains in utility, the small but positive probability of a large global catastrophe (e.g., large asteroid collision, super volcanic eruption, nuclear war), and expectations regarding future levels of economic growth.** In the case of CH₄, which has a relatively short lifetime compared to CO₂, the temporal independence of the GWP could lead the approximation in (2) to underestimate the SC -CH₄ with a larger downward bias under higher discount rates (Marten and Newbold 2012).¹*

¹ We note that the truncation of the time period in the GWP calculation could lead to an overestimate of SC-CH₄ for near term perturbation years in cases where the SC-CO₂ is based on a sufficiently low or steeply declining discount rate.

Regarding the inconsistency of the 100- and 300-year horizons: Yes, I suppose this is true but there really is no direct comparison. In the economic analysis one hopefully has a far enough time horizon so that with discounting it is irrelevant. In some sense choice of discount rate is a substitute for the choice of time horizon—the higher the discount rate the shorter the time horizon. In a final version of this paper I might rephrase this as something like. *In the USG SC-CO₂ estimates a 300-year time horizon was used, long enough to minimize its effects on estimates given the discount rates used. In contrast the GWP approach is to truncate estimates at different time horizons (20-, 100-, 500-years), treating all impacts within the time horizon equally, independent of the time at which they occur.* I think this gets across the point you want to make without directly suggesting that the 100-year and 300-year horizons are inconsistent (when in fact that is not even comparable.)

Then the second emboldened sentence raising a huge set of issues and controversies. I think the sentence would be best deleted. The discount rate should not theoretically include the risk of catastrophe. Risks should be separately evaluated with a risk-free discount rate to arrive at an “expected” social cost of carbon, perhaps with a utility function that more heavily weights bad outcomes. While an observed rate of return can include a risk premium based on a specific assessment of the risk (and time profile of the risk) it is inappropriate to apply a risk premium to a discount rate and then apply that risk-adjusted rate to many different investment profiles. Here, different characterizations of when catastrophes may occur. Embedding risk into the discount rate in this manner is little different than using GWP’s with truncated time horizons to implicitly give different weights (1 or 0) to damages occurring at different times. And while in a Ramsey model the discount rate is approximately the sum of the pure rate of time preference plus the growth rate that again is calculation under certainty so using “expected growth” is inconsistent. Then you have the Weitzman argument that with uncertainty in the appropriate discount rate, one should use a declining rate. And bringing up things like asteroid collisions and such just seems distracting here.

Finally, I guess the last emboldened statement is true but it took me a long time to figure it out. A higher discount rate, as compared to a lower rate, will lead to a lower social cost of carbon (or methane). So concluding that it will underestimate the Social Cost of Methane seemed initially backward. Further a higher discount rate, while lowering the social cost of both gases, will tend to raise the Social Cost of Methane relative to that of carbon. But I guess if I fully parse this sentence, you are saying that taking a specific GWP-horizon (e.g 100 years) and deriving a SC of methane by applying it to your existing SC of carbon, then if you were to do this the right way with a high discount rate—that SC of methane would be higher than that derived using the shorthand method. Maybe there is a clearer way to say this...but then I’m not sure why this is important. There seems to be a concern about underestimating the methane value. You could just as easily say,

that methane would be overvalued for low discount rates. I'd think you just want the CS of carbon and methane to be consistent and unbiased in either direction.

4. *Do you agree with EPA's assessment that direct estimates of the SC-CH₄, as developed by Marten et al., are more appropriate for monetizing changes in CH₄ emissions than using the GWP to scale the USG SC-CO₂?*

Yes, see above.

5. *Are there other existing approaches for monetizing the benefits (or dis-benefits) to society from reductions (increases) in CH₄ emissions that should be considered in regulatory analysis?*

Not of which I am aware. As the Reilly and Richards (1993) paper referred to in the Marten et al. (2014) paper the multiple impacts of these different gases, beyond climate change, could in principle be incorporated into the analysis but that raises further complications. E.g. CO₂ has some benefit to crop growth (disputed) but ozone (of which methane is a precursor) has not only climate implications but also damages to crops and health. However, with all the recognized limitations to the empirical foundation for the SC estimates, the chosen approach is theoretically sound.

6. *Although the focus of this review is on the application of estimates of the social cost of CH₄ to benefit-cost analysis for regulations, do your answers for the questions above hold for the application of the social cost of N₂O estimates provided in Marten et al.?*

Yes, the method is equally applicable to N₂O.

7. *Are there implementation issues not addressed in the paper that EPA should consider before applying the Marten et al. estimates in regulatory analysis?*

As the paper itself points out, the current approach of using a social cost of 0 is clearly not right and so whatever the limitations of existing methods it seems better to use something rather than nothing. Of course one could use a value that is so high that zero would be preferable, but I don't see that error here. More to the point: Accepting the Social Cost of Carbon estimates, this approach consistently applies the concept to methane (and potentially other GHGs).

John Reilly
MIT

Peer Review of EPA Proposed Methodology “Valuing Methane Emission Changes in Regulatory Benefit-Cost Analysis”

Steven Rose, Ph.D., Energy and Environmental Analysis Research Group, EPRI

January 15, 2015

This is an extremely challenging research area due to the breadth of physical and social sciences represented and the vast uncertainty inherent in modeling global biophysical and economic systems for centuries to come. EPA should be commended for seeking peer review feedback. Peer review is important for producing scientifically defensible results and instilling public confidence. However, given the regulatory importance of the social cost of greenhouse gas estimates, a different peer review process should be pursued going forward that will increase public confidence in the ultimate outcome (see suggestion at the end of my comments).

For this review activity, EPA requested peer review feedback on seven charge questions. Below I have responded to each. Overall, I am concerned about moving forward with direct non-CO₂ social cost estimates based on the USG SC-CO₂ methodology before having a peer reviewed SC-CO₂ methodology.

Responses to EPA Charge Questions

1. *Has EPA correctly interpreted the SC-CH₄ estimates provided in Marten et al. (2014) as designed to measure the monetized value of the climate impacts from marginal changes in CH₄ emissions in a way that is appropriate for use in benefit-cost analysis of regulatory actions projected to change CH₄ emissions?*

Yes, the Marten et al. SC-CH₄ estimates are derived with marginal global methane pulses and as such would be conceptually appropriate for valuing incremental changes in global methane emissions such as those likely to result from U.S. regulatory actions. However, as discussed below, there are computational issues with the specific Marten et al. SC-CH₄ estimates that need to be considered; and, implementation issues associated with using the SC-CH₄ estimates to value regulatory action methane changes.

2. *Do you agree that the Marten et al. SC-CH₄ estimates are consistent with the USG SC-CO₂ estimates?*

The Marten et al. estimates are mostly consistent with the USG SC-CO₂ estimates. They are consistent in a variety of ways with the USG SC-CO₂ estimates due to the common experimental design (e.g., same three integrated assessment (IA) models, uncertainty specification, scenario runs, and results aggregation procedure). However, they do not appear to be entirely consistent, and the implications are not clear to me. For instance, the simple model used to compute CH₄ concentrations and radiative forcing is different from the modeling used to construct non-CO₂ forcing for the PAGE and DICE model's USG SC-CO₂ reference and pulse scenarios. It is not clear to me whether this is a big deal. One would want to compare reference and incremental perturbation responses for all the EMF-22 emissions scenarios. Marten et al. makes some comparison to MAGICC 5.3, but doesn't comment on reference scenario differences (that could impact SC-CO₂ estimates) or on the differences for higher and lower

emissions scenarios. Another inconsistency is the implementation of the CH₄ and CO₂ perturbations. The CO₂ perturbations in the USG SC-CO₂ calculations vary by model, differing in temporal implementation and magnitude (see Section 5 in *Understanding the Social Cost of Carbon: A Technical Assessment*, <http://epri.co/3002004657>). In DICE, a 1 GtC shock was added over the decade which straddles year *t*, in FUND, a 1 million metric ton carbon (1 MtC) shock was added to every year within a decade from year *t* forward, and in PAGE, 100 billion metric tons of CO₂ (100 GtCO₂, 27 GtC) was distributed evenly over the decades preceding and subsequent to year *t*.¹ In Marten et al. however, the CH₄ perturbation was a 1 MtCH₄ pulse in a single year *t*.

More importantly, while consistency is the driving motivation for the Marten et al. paper, it creates a serious problem. The Marten et al. SC-CH₄ estimates inherit all the issues associated with the USG SC-CO₂ estimates. Overall, consistency with the USG SC-CO₂ methodology is a scientifically pragmatic and laudable objective for SC-CH₄ calculations. However, it requires that the SC-CO₂ methodology be scientifically sound. However, the USG SC-CO₂ methodology, and the IA models themselves, have not undergone peer review; and, a number of fundamental issues have been identified that could merit and motivate revisions to the USG SC-CO₂ methodology (and resulting SC-CO₂ & SC-CH₄ estimates). Scientifically, it would be inappropriate at this stage to propagate issues with the SC-CO₂ methodology by moving forward with the proposed Marten et al. (2014) SC-CH₄ (and SC-N₂O) estimates. Unfortunately, consistency alone is not adequate justification for using the Marten et al. estimates. A peer reviewed SC-CO₂ methodology is needed before creating consistent SC-X estimates for non-CO₂ gases. See reply below to Charge Question #4 for some of the important issues that need to be considered.

3. *Do you agree with EPA's characterization of the limitations of using the global warming potential (GWP) to approximate the SC-CH₄ (and other non-CO₂ GHGs)?*

Yes, conceptually, I agree with the limitations noted. However, practically, there are methodological issues that should be re-considered, and potentially revised, before one can legitimately begin to claim that the SC-CH₄ estimates are improvements over GWP application. See reply to Charge Question 4.

4. *Do you agree with EPA's assessment that direct estimates of the SC-CH₄, as developed by Marten et al., are more appropriate for monetizing changes in CH₄ emissions than using the GWP to scale the USG SC-CO₂?*

Conceptually, direct estimates of SC-CH₄ are more appropriate than using GWPs to value CH₄ emissions changes associated with US regulatory actions. Practically, however, is another issue. It depends on the scientific soundness of the SC-CH₄ estimation methodology. Unfortunately, the current USG SC-CO₂ methodology, and therefore the proposed SC-CH₄ methodology, has not been peer reviewed to establish scientific soundness, and as noted, fundamental issues with the current methodology have been identified. For instance, we recently completed and published a very extensive technical assessment of the USG SC-CO₂ modeling that coded up individual

¹ Note that with PAGE, the emissions pulse is initially introduced as a uniform increase in average annual CO₂ emissions over the given period associated with year *t*. However, within PAGE's climate model, emissions for years *t-1* and *t* are averaged. Thus, the emissions pulse enters PAGE's carbon cycle as uniform (but half-sized) increases in average annual emissions in both the decades preceding and following year *t*.

components of the models and ran diagnostic scenarios (*Understanding the Social Cost of Carbon: A Technical Assessment*, <http://epri.co/3002004657>). From the analyses, we identified a number of fundamental issues with the USG SC-CO₂ approach that should be considered:

- a. Significant structural & response differences across models that need to be evaluated to determine whether they are providing useful information or are differences to reconcile or address explicitly as an uncertainty. For instance, the models do not consider the same sets of emissions and radiative forcing categories—the drivers for projected temperature. The models also have stark differences in key pieces of the climate modeling (e.g., the carbon cycle, climate sensitivity, climate feedbacks, and projected climate change uncertainty), with some elements excluded entirely from some models. Furthermore, unique model specific factors dominate results in the damage components and therefore raise questions about their representation within each model and across models—e.g., agricultural CO₂ fertilization, cooling energy demand, global damages dominated by China, regional scaling of damages, rapidly growing global non-economic damages, potential discontinuity damages, and damages that increase quadratically with temperature. Finally, the study also finds dramatic differences in estimated damages across models for comparable regions and sectors that are not explored or explained.
- b. Reasonable alternative specifications, additional uncertainties, and some variation that is artificial due to, for instance, difference in model implementation. Together, these findings suggest the need to revisit the representation of uncertainty in the experimental design.
- c. Inconsistencies across modeling, as well as inter-model dependency, that raises an issue about the statistical comparability of results produced by the three different models. Statistical comparability and independence is required for USG SC-CO₂ approach which combines 150,000 results from the three IA models into a distribution in order to derive a single USG SC-CO₂ for a given year and discount rate.
- d. The current USG SC-CO₂ estimates may not be robust (i.e., insensitive to alternative assumptions) given that (i) the study finds the underlying climate and damage results from the models (e.g., concentrations, radiative forcing, temperature, and sector and regional specific damages over time) to be very sensitive to alternative assumptions, and (ii) the study finds reasonable alternatives to the assumptions and modeling used in the USG SC-CO₂ experiment.
- e. Issues with the overall experimental design, in particular the use of multiple models, which creates the consistency and comparability challenges and issues noted previously.

Based on these findings, the study makes a number of recommendations that could help increase scientific and public confidence in the SC-CO₂ results:

- a. Internally review the modeling to evaluate differences, improve comparability and uncertainty representation, and enhance robustness.
- b. Revisit the experimental design, especially given the challenges with the multi-model approach.

- c. Evaluate robustness to reasonable alternative assumptions and modeling to insure that the results are stable.
- d. Peer review the approach and the models used. The USG SC-CO₂ approach is novel and peer review would be valuable and practical. Model review would also be practical given the regulatory use of the models.
- e. Additional documentation and justification for methodological choices to facilitate communications & interpretation, and increase public confidence.
- f. Application guidance to insure proper application of USG SC-CO₂ estimates.

Other researchers, of course, have also identified issues with the current USG SC-CO₂ approach. Marten et al. cite a number of studies (Arrow et al., 2013; Kopp & Mignone 2012; Marten, 2011; O'Neil, 2010; Warren, Mastrandrea, Hope, & Hof, 2010). And recently, the scientific community has called for a more scientific process with greater scientific community engagement and formal peer review (Pizer et al., 2015).

5. *Are there other existing approaches for monetizing the benefits (or dis-benefits) to society from reductions (increases) in CH₄ emissions that should be considered in regulatory analysis?*

Global temperature potentials could be considered, but they would have similar time period issues as GWPs.

6. *Although the focus of this review is on the application of estimates of the social cost of CH₄ to benefit-cost analysis for regulations, do your answers for the questions above hold for the application of the social cost of N₂O estimates provided in Marten et al.?*

Yes, I have similar concerns about the Marten et al. SC-N₂O estimates and would be reluctant to move forward with the Marten et al. SC-N₂O and SC-CH₄ estimates.

7. *Are there implementation issues not addressed in the paper that EPA should consider before applying the Marten et al. estimates in regulatory analysis?*

Yes, in addition to the issues raised in my comments above regarding the Marten et al. SC-CH₄ (and SC-N₂O) estimates, there are a few issues regarding use of SC-CH₄ and SC-N₂O values. First, in regulatory applications, it will be essential to estimate net global changes in emissions due to proposed rules in order to appropriately utilize SC-CH₄ and SC-N₂O estimates, which reflect the marginal value of net global changes in methane and nitrous oxide respectively. Second, it will be important to think about consistency in the underlying assumptions in benefit and cost calculations, e.g., those used for computing social costs of GHGs, GHG emissions reductions, and compliance costs. Third, current USG guidance to use all SC-CO₂ estimates will presumably be the same for SC-CH₄ and SC-N₂O estimates. As such, the guidance needs to be expanded to provide direction on how agencies should use the multiple resulting CO₂ (CH₄, or N₂O) benefit estimates in benefit-cost analyses and regulation proposal decisions.

Additional comment

Given the regulatory importance of the social cost of greenhouse gas estimates, a more extensive and public peer review process should be pursued going forward that will give the public greater confidence in the ultimate values. Specifically, peer review of the USG SC-CO₂ methodology (and the subsequent non-CO₂ social cost methodologies) should be a public process with a scientific review panel (created through a public selection process) that produces a single report reflecting the panel's critique and recommendations. This sort of review process is typical for important regulatory metrics and methodologies, and a key function of groups like EPA's Science Advisory Board. The peer review I'm participating in here is a useful means of soliciting scientific feedback, but not a substitute for the review process needed (and described above).

References

- Arrow, K., Cropper, M., Gollier, C., Groom, B., Heal, G., Newell, R., Weitzman, M. (2013). Determining benefits and costs for future generations. *Science*, 341, 349–350.
- Kopp, R. E., B.K. Mignone (2012). The U.S. government's social cost of carbon estimates after their first two years: Pathways for improvement. *Economics*, 6(15), 1–41.
- Marten, A. L. (2011). Transient temperature response modeling in IAMs: The effects of over simplification on the SCC. *Economics*, 5, 2011–2018.
- O'Neill, B. (2010). Multi-century scenario development and socioeconomic uncertainty. *In Improving the assessment and valuation of climate change impacts for policy and regulatory analysis: Modeling climate change impacts and associated economic damages*. US Environmental Protection Agency/US Department of Energy. Retrieved from [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0564-115.pdf/\\$file/EE-0564-115.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0564-115.pdf/$file/EE-0564-115.pdf)
- Pizer, W., M. Adler, J. Aldy, D. Anthoff, M. Cropper, K. Gillingham, M. Greenstone, B. Murray, R. Newell, R. Richels, A. Rowell, S. Waldhoff, J. Wiener (2014). Using and improving the social cost of carbon, *Science* 5: 1189-1190.
- Warren, R., Mastrandrea, M. D., Hope, C., & Hof, A. F. (2010). Variation in the climatic response to SRES emissions scenarios in integrated assessment models. *Climatic Change*, 102, 671–785.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marsh, Karen[Marsh.Karen@epa.gov]; Thundiyil, Karen[Thundiyil.Karen@epa.gov]
Cc: Fulcher, Charles[Fulcher.Charles@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]
From: Ward, Hillary
Sent: Tue 6/9/2015 12:50:13 PM
Subject: RE: suggestions for shortening benefits language for Landfills EG

Haven't heard anything from our management yet. But I'm sure we'll hear something today.

For the purposes of version control:

Charlie/Kate: Can you confirm that you're working on the changes to NSPS,EG,RIA? Can you give us an estimate of when you expect to turn this around?

When you send the updated files, **please change the date at the end of the file name**. We're finishing up the other OP comments (including some that have to go through OECA management).

Thanks,

Hillary Ward

US EPA, Sector Policies and Programs Division

Fuels and Incineration Group

(919)541-3154

From: Kopits, Elizabeth
Sent: Tuesday, June 09, 2015 8:23 AM
To: Marsh, Karen; Thundiyil, Karen
Cc: Ward, Hillary; Fulcher, Charles; Shouse, Kate; Barron, Alex; McGartland, Al; Moore, Chris; Marten, Alex
Subject: suggestions for shortening benefits language for Landfills EG

Hi Karen,

Not sure if you have already received this through other channels (I think Alex B. was trying to reach Peter T. yesterday), but we had a chance to discuss the status of the landfills benefits language with Joel and he had two suggestions:

- 1) We should try to update all numbers and text in both packages to reflect the SCC correction. This includes the text edits we have already sent along, and Kate is working with Charlie on updating all the numbers in the NSPS supplemental, EG preamble, and RIA.
- 2) It might be best to shorten the benefits discussion in the EG preamble too. Attached is a suggested revision that cuts it down to about 9 pages. This version reflects edits from Kate as well.

Hope this helps. Please feel free to call me with any questions etc.

Thanks!

Elizabeth

Elizabeth Kopits, Ph.D.

National Center for Environmental Economics

Office of Policy, US EPA

1200 Pennsylvania Ave, NW, MC 1809T

Washington, DC 20460

(202) 566-2299

From: Marsh, Karen
Sent: Thursday, June 04, 2015 3:01 PM
To: Thundiyil, Karen
Cc: Ward, Hillary; Fulcher, Charles; Shouse, Kate; Kopits, Elizabeth
Subject: Updated benefits language for Landfills NSPS

Karen,

Attached is the updated version of the benefits language for the Landfills NSPS. This language will go immediately following Table 1 in the preamble. This is more in line with the amount of detail needed for the preamble. Please review this language and let me know if you have any additional comments or edits. Once we receive those edits we can finalize the package and have it sent back through the proper channels for submittal to OMB.

Thanks,

Karen

Karen R. Marsh, PE

US EPA, OAQPS, Sectors Policies and Programs Division

Fuels and Incineration Group

109 TW Alexander Drive, Mail Code E143-05

Research Triangle Park, NC 27711

Direct: (919) 541-1065; email: marsh.karen@epa.gov

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]
Cc: Thundiyil, Karen[Thundiyil.Karen@epa.gov]; Marsh, Karen[Marsh.Karen@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]; Fulcher, Charles[Fulcher.Charles@epa.gov]; Vetter, Rick[Vetter.Rick@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
From: Ward, Hillary
Sent: Wed 6/3/2015 2:26:42 PM
Subject: RE: Landfill Packages

Non-Responsive

Hillary Ward

US EPA, Sector Policies and Programs Division

Fuels and Incineration Group

(919)541-3154

From: Kopits, Elizabeth
Sent: Wednesday, June 03, 2015 9:58 AM
To: Ward, Hillary; Moore, Chris
Cc: Thundiyil, Karen; Marsh, Karen; Cozzie, David; Fulcher, Charles; Vetter, Rick; Shouse, Kate
Subject: RE: Landfill Packages

Hi Hillary,

Non-Responsive

As for #3, are you proposing that the version submitted to OMB still include the edits to the text – e.g., describing the OMB comment period on SCC etc. – or do you want to remove all that as well, and only add that when you send the revised package with updated numbers?

Thanks,

Elizabeth

From: Ward, Hillary

Sent: Wednesday, June 03, 2015 9:40 AM

To: Kopits, Elizabeth; Moore, Chris

Cc: Thundiyil, Karen; Marsh, Karen; Cozzie, David; Fulcher, Charles; Vetter, Rick; Shouse, Kate

Subject: Landfill Packages

Importance: High

Morning Elizabeth and Chris,

Thank you for taking time to review the landfill packages. We appreciate your willingness to work with our office to turn the packages around quickly.

We have learned that

Non-Responsive

Outstanding major issues of concern:

1. Text added to NSPS. We believe that text from the RIA (with minor edits) is more appropriate. The substantive content for what we're actually proposing

Non-Responsive

Non-Responsive is approximately 6 pages. This is the actual focus of the supplemental proposal. The current version of the SC-CH4 addition is 5 pages.

Ex 5

Ex 5

2. Presentation of standard tables and impacts. We have a Consistency Team dedicated to ensuring that certain guidelines are followed across our rules. While we understand your perspective (from the econ side of OP), our package must still adhere to certain requirements.

Non-Responsive

3. SC-CH4 calcs

Ex 5

Ex 5

Thanks again and it's our hope that these issues can be resolved quickly.

Hillary Ward

US EPA, Sector Policies and Programs Division

Fuels and Incineration Group

(919)541-3154

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Shouse, Kate
Sent: Mon 6/1/2015 7:17:56 PM
Subject: RE: Landfills supplemental NSPS - SC-CH4 insert

Thanks - I had flagged the numbers for updating but they were removed in the version sent to you.

Ex 5

Ex 5

From: Kopits, Elizabeth
Sent: Monday, June 01, 2015 3:06 PM
To: Marsh, Karen; Vetter, Rick; Thundiyil, Karen
Cc: Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate; Moore, Chris; Marten, Alex
Subject: RE: Landfills supplemental NSPS - SC-CH4 insert

Hi Karen et al.,

I think this is a good length for the supplemental. Attached are some suggested edits that hopefully do not make it too much longer!

Please feel free to call me to discuss, or Kate and I can just iterate directly if that is easier (we are working together on the SCC/SCM section for a number of other rules anyway).

Thanks,

Elizabeth

Elizabeth Kopits, Ph.D.

National Center for Environmental Economics

Office of Policy, US EPA

1200 Pennsylvania Ave, NW, MC 1809T

Washington, DC 20460

(202) 566-2299

From: Marsh, Karen

Sent: Monday, June 01, 2015 1:31 PM

To: Vetter, Rick; Thundiyil, Karen; Kopits, Elizabeth

Cc: Ward, Hillary; Cozzie, David; Fulcher, Charles; Shouse, Kate

Subject: Landfills supplemental NSPS - SC-CH4 insert

Rick, Karen, and Elizabeth,

Attached for your review is language we intend to insert in the MSW Landfills NSPS Supplemental proposal related to the social-cost of methane. This text will go immediately following Table 1. Kate Shouse prepared the text and Charlie and I worked together to make a few minor edits, including only presenting the proposed option in Table 2 for consistency with what we have in the current version of the Emission Guidelines proposal.

Please review this text and let me know if you have any additional changes or edits and if this will suffice for discussion in the NSPS supplemental with further discussion available in the RIA.

Thanks,

Karen

Karen R. Marsh, PE

US EPA, OAQPS, Sectors Policies and Programs Division

Fuels and Incineration Group

109 TW Alexander Drive, Mail Code E143-05

Research Triangle Park, NC 27711

Personal cell/email email: marsh.karen@epa.gov

To: Vetter, Rick[Vetter.Rick@epa.gov]; Thundiyil, Karen[Thundiyil.Karen@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Ward, Hillary[Ward.Hillary@epa.gov]; Cozzie, David[Cozzie.David@epa.gov]; Fulcher, Charles[Fulcher.Charles@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
From: Marsh, Karen
Sent: Mon 6/1/2015 5:31:16 PM
Subject: Landfills supplemental NSPS - SC-CH4 insert
SC-CH4 NSPS Insert 060115.docx

Rick, Karen, and Elizabeth,

Attached for your review is language we intend to insert in the MSW Landfills NSPS Supplemental proposal related to the social-cost of methane. This text will go immediately following Table 1. Kate Shouse prepared the text and Charlie and I worked together to make a few minor edits, including only presenting the proposed option in Table 2 for consistency with what we have in the current version of the Emission Guidelines proposal.

Please review this text and let me know if you have any additional changes or edits and if this will suffice for discussion in the NSPS supplemental with further discussion available in the RIA.

Thanks,

Karen

Karen R. Marsh, PE

US EPA, OAQPS, Sectors Policies and Programs Division

Fuels and Incineration Group

109 TW Alexander Drive, Mail Code E143-05

Research Triangle Park, NC 27711

Personal cell/email : email: marsh.karen@epa.gov

To: Griffiths, Charles[Griffiths.Charles@epa.gov]
Cc: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Fri 5/15/2015 9:11:41 PM
Subject: Re: Social Cost of Carbon Uncertainty/Reliability

Charles, 9:00 EST might be pretty early for them.

--
Alex Marten
marten.alex@epa.gov

From: Griffiths, Charles
Sent: Friday, May 15, 2015 4:48 PM
To: Miller, Chris J -FS; Newbold, Steve; Kopits, Elizabeth; Marten, Alex; Schaefers, Julie -FS; Sorkin, Jeff A -FS; Mattson, Liane -FS
Subject: RE: Social Cost of Carbon Uncertainty/Reliability

Sorry, Chris. I don't think Tuesday a 1:00 works for everyone here. Was my proposed time at 9:00 not possible? How about Wednesday at 9:00 AM?

-----Original Appointment-----

From: Miller, Chris J -FS [<mailto:chrismiller@fs.fed.us>]
Sent: Friday, May 15, 2015 4:24 PM
To: Griffiths, Charles; Newbold, Steve; Kopits, Elizabeth; Marten, Alex; Schaefers, Julie -FS; Sorkin, Jeff A -FS; Mattson, Liane -FS
Subject: Social Cost of Carbon Uncertainty/Reliability
When: Tuesday, May 19, 2015 11:00 AM-11:30 AM (UTC-07:00) Mountain Time (US & Canada).
Where: **Conference code**

Thanks everyone for your willingness to participate in brief conference call to discuss the uncertainty associated with applying social cost of carbon values (2013) in NEPA and rule-making.

Conference code

Not necessary reading but for additional background see attached paper.

Participants:
EPA National Center for Environmental Economics
USFS – Region 2 (Denver CO) staff (economics, minerals, air)
USFS – Washington Office – National Forest Systems staff (economics)
<< File: Newbold et al. 2013.pdf >>

To: Evans, DavidA[Evans.DavidA@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
Cc: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
From: Macpherson, Alex
Sent: Thur 5/28/2015 9:50:33 PM
Subject: RE: SC-CO2 in 12866 section

Like this:

Non-Responsive

From: Evans, DavidA
Sent: Thursday, May 28, 2015 5:33 PM
To: Macpherson, Alex; Marten, Alex
Cc: Kopits, Elizabeth; Shouse, Kate
Subject: RE: SC-CO2 in 12866 section

Alex,

Thanks. You might want to edit highlighted section below to reflect the summary in the preamble. I think I saw a sentence that is more complete

Non-Responsive

It says something like

Non-Responsive

Non-Responsive

d

From: Macpherson, Alex
Sent: Thursday, May 28, 2015 5:18 PM
To: Marten, Alex
Cc: Kopits, Elizabeth; Evans, DavidA; Shouse, Kate
Subject: RE: SC-CO2 in 12866 section

Kate and I are the process, I guess. Dave might be looking at old one. Kate carried everything over I think. Here's current draft, please give quick read:

Non-Responsive

Ex 5

Ex 5

From: Marten, Alex
Sent: Thursday, May 28, 2015 5:13 PM
To: Macpherson, Alex
Cc: Kopits, Elizabeth; Evans, DavidA; Shouse, Kate
Subject: RE: SC-CO2 in 12866 section

Hi Alex,

What is the process for making sure any edits in section XI of the 111(d) preamble are ported over to the 12866 section?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Evans, DavidA
Sent: Thursday, May 28, 2015 5:10 PM
To: Marten, Alex; Shouse, Kate
Cc: Kopits, Elizabeth
Subject: SC-CO2 in 12866 section

Alex and Kate,

Not sure if you guys are on this already, but the 12866 section says things like:

The EPA has used the social cost of carbon estimates presented in the 2013 *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (2013 Social Cost of Carbon TSD) to analyze CO₂ climate impacts of this rulemaking.

I'm pretty sure I just noticed edits to similar text in the impacts section.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Mon 6/29/2015 1:28:11 PM
Subject: RE: SC-CH4 Discussion w/ OMB

I don't think the reviews have been shared yet but will let Alex chime in otherwise.

Ex 5

Also, Allen and I are planning to bring Chikara, the PhD student interning with us this summer, to this meeting in your conference room. Let me know if space is tight, though.

Thanks

Kate

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:23 AM
To: Marten, Alex; Shouse, Kate
Subject: RE: SC-CH4 Discussion w/ OMB

I think we need to touch base with Joel again on this before it is up on the website. I will ask Nathalie to add it to tomorrow's biweekly agenda.

Ex 5

From: Marten, Alex
Sent: Monday, June 29, 2015 9:17 AM
To: Kopits, Elizabeth; Shouse, Kate
Subject: RE: SC-CH4 Discussion w/ OMB

Ex 5

But I agree that we should put them in the docket also.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Monday, June 29, 2015 9:15 AM
To: Shouse, Kate; Marten, Alex
Subject: RE: SC-CH4 Discussion w/ OMB

Ex 5

From: Shouse, Kate
Sent: Monday, June 29, 2015 9:14 AM
To: Marten, Alex
Cc: Kopits, Elizabeth
Subject: RE: SC-CH4 Discussion w/ OMB

Thanks, Alex. I think the slides look great, j

Ex 5

Ex 5

Thanks,
Kate

From: Marten, Alex
Sent: Saturday, June 27, 2015 4:27 PM
To: Macpherson, Alex; Shouse, Kate; Kopits, Elizabeth
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: Re: SC-CH4 Discussion w/ OMB

Thanks Alex. If others are going to take a look please use the attached. I added info on EPA's peer review of the application of the results to RIAs.

--

Alex Marten

marten.alex@epa.gov

From: Macpherson, Alex
Sent: Saturday, June 27, 2015 3:57 PM
To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

Seems good to me, Alex. No comments.

From: Marten, Alex
Sent: Friday, June 26, 2015 8:12 PM
To: Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex
Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl
Subject: RE: SC-CH4 Discussion w/ OMB

I thought it might be useful to have a couple slides to help guide Monday's conversation.

Given the timing of things I know that doesn't allow a lot of time for review, but please let me know if you have any comments or suggestions.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Appointment-----

From: Marten, Alex

Sent: Friday, June 26, 2015 4:51 PM

To: Marten, Alex; Shouse, Kate; Kopits, Elizabeth; Macpherson, Alex

Cc: Newbold, Steve; McGartland, Al; Fawcett, Allen; Weatherhead, Darryl

Subject: SC-CH4 Discussion w/ OMB

When: Monday, June 29, 2015 12:00 PM-1:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: DCRoomWest4424G/OPEI

Conference code

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Thur 5/14/2015 7:21:13 PM
Subject: RE: SCC vs SC-CO2

Ex 5

From: Kopits, Elizabeth
Sent: Thursday, May 14, 2015 1:27 PM
To: Shouse, Kate
Cc: Marten, Alex
Subject: RE: SCC vs SC-CO2

Hmmm.

Ex 5

Ex 5

Just my opinion though.

From: Shouse, Kate
Sent: Thursday, May 14, 2015 1:21 PM
To: Kopits, Elizabeth
Cc: Marten, Alex
Subject: SCC vs SC-CO2

Thanks, Elizabeth.

Ex 5

Ex 5

From: Kopits, Elizabeth
Sent: Thursday, May 14, 2015 11:21 AM
To: Shouse, Kate
Cc: Sarofim, Marcus; Marten, Alex
Subject: RE: Q&As for OTAQ on HD2?

Looks good. Here are just a few edits on the Q&A.

Thanks,

E.

From: Shouse, Kate
Sent: Thursday, May 14, 2015 10:49 AM
To: Kopits, Elizabeth
Cc: Sarofim, Marcus; Marten, Alex
Subject: RE: Q&As for OTAQ on HD2?

Thanks, Elizabeth.

Ex 5

Ex 5

Ex 5

From: Kopits, Elizabeth
Sent: Thursday, May 14, 2015 10:43 AM
To: Shouse, Kate
Subject: RE: Q&As for OTAQ on HD2?

Hey Kate - Can you send me the HD2 RIA? It would help me to look at it for a few of these responses. Thanks!

From: Shouse, Kate
Sent: Wednesday, May 13, 2015 4:01 PM
To: Sarofim, Marcus; Kopits, Elizabeth; Marten, Alex
Cc: Fawcett, Allen
Subject: Q&As for OTAQ on HD2?

Do any of you have the time/interest to review these Q&As for OTAQ? OTAQ asked for some

Ex 5

I'm going to look these over again tomorrow (Thurs), please let me know if you want to weigh in before I send to OTAQ this week.

Thanks,
Kate

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Thur 5/14/2015 2:49:18 PM
Subject: old nas comms materials
2015 02 11 SCC NAS draft comms materials.docx

may no longer be helpful since there wasn't much to say in February

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Rose, Steven
Sent: Wed 4/15/2015 5:07:16 PM
Subject: Individual SCC results

Hi Elizabeth,

I hope you are well and enjoying the beautiful spring. I'm just writing with a quick SCC question. Would it be possible for you to share the 2013 individual model SCC estimates for each year (i.e., the 50,000 estimates from each model for each year 2010-2050)? I'm trying to better understand the individual models and it would be helpful to see their individual results.

Thanks for whatever you can share.

Best wishes,

Steve

Steven Rose, Ph.D.

Senior Research Economist

Energy and Environmental Analysis Research Group

EPRI (Electric Power Research Institute)

1325 G Street NW

Suite 1080

Washington, DC 20005

USA

+1 (202) 293-6183

srose@epri.com

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Metcalf, Gilbert E.[Gilbert.Metcalf@tufts.edu]
From: Stock, James
Sent: Thur 2/12/2015 7:54:32 PM
Subject: FW: Paper on IAMs and climate policy
[Metcalf Stock REEP Draft v5.pdf](#)

Elizabeth,

Attached is a draft of a paper for a REEP symposium on the use of integrated assessment models for climate policy that Gib Metcalf I have written (the other two papers are by John Weyant and by Bob Pindyck). I'd be very interested in your reactions.

Thanks and best regards,

Jim

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Metcalf, Gilbert E.[Gilbert.Metcalf@tufts.edu]
From: Stock, James
Sent: Thur 2/12/2015 7:54:32 PM
Subject: FW: Paper on IAMs and climate policy
[Metcalf Stock REEP Draft v5.pdf](#)

Elizabeth,

Attached is a draft of a paper for a REEP symposium on the use of integrated assessment models for climate policy that Gib Metcalf I have written (the other two papers are by John Weyant and by Bob Pindyck). I'd be very interested in your reactions.

Thanks and best regards,

Jim

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 1/21/2015 8:37:39 PM
Subject: RE: recap of SCC/SCM to do list

Thanks, Elizabeth. I'm going to review the timeline and will let you know if I have any comments/changes tonight. If you're otherwise ready to send now, please do – I skimmed and didn't see anything missing but want to take a closer look.

Regarding #4 below – still happy to offer to take the pen but would like to clarify that I'll leave placeholders on the APA/process response for OMB to fill in.

Regarding #5 – Yes, Shaun is CEB's primary contact on the landfill rule (covering variety of economic topics) but I'll be doing the SCM pieces of it.

From: Kopits, Elizabeth
Sent: Wednesday, January 21, 2015 1:28 PM
To: Marten, Alex; Shouse, Kate
Subject: recap of SCC/SCM to do list

Hi Alex and Kate,

Per my discussion with Alex B, here is a recap of our immediate SCC/SCM to do list. Please let me know if I am forgetting something. I will do what I can to send you both my thoughts on #1-3 before the end of the week. And happy to discuss #4 when you are ready.

Need to draft:

Ex 5

Ex 5

Also, attached is my draft timeline that Alex B asked for. He said bullet form was fine so I didn't spend much time trying to think of a prettier format, but if you have an idea for alternative (simple!) presentation formats, please let me know. And please let me know if I am forgetting anything. I'd like to send this to him later today or tomorrow morning if possible.

Thanks!

Elizabeth

To: McGartland, Al[McGartland.Al@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Tue 1/20/2015 10:59:39 PM
Subject: RE: we probably need a desk statement/q and a's on SCC process with NAS. What do you think

I think we will. My preference would be to land on agreed upon text

Ex 5

Ex 5

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Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: McGartland, Al
Sent: Tuesday, January 20, 2015 5:52 PM
To: Kopits, Elizabeth; Marten, Alex
Subject: we probably need a desk statement/q and a's on SCC process with NAS. What do you think

To: McGartland, Al[McGartland.Al@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Marten, Alex
Sent: Tue 1/20/2015 10:59:39 PM
Subject: RE: we probably need a desk statement/q and a's on SCC process with NAS. What do you think

I think we will. My preference would be to land on agreed upon text

Ex 5

Ex 5

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: McGartland, Al
Sent: Tuesday, January 20, 2015 5:52 PM
To: Kopits, Elizabeth; Marten, Alex
Subject: we probably need a desk statement/q and a's on SCC process with NAS. What do you think

To: Klemick, Heather[Klemick.Heather@epa.gov]
Cc: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]
From: Bowen, Jennifer
Sent: Tue 1/20/2015 6:49:28 PM
Subject: RE: Quick review please!!!!

Yes – thanks.

From: Klemick, Heather
Sent: Tuesday, January 20, 2015 1:47 PM
To: Bowen, Jennifer
Cc: Kopits, Elizabeth; Wolverton, Ann; Evans, DavidA
Subject: FW: Quick review please!!!!

Hi Jenny,

If you're still compiling comments on the ERP, attached are comments from myself and from Elizabeth.

Thanks,

Heather

From: Kopits, Elizabeth
Sent: Tuesday, January 20, 2015 10:52 AM
To: Klemick, Heather; Griffiths, Charles; Shadbegian, Ron
Cc: Wolverton, Ann; Evans, DavidA; Marten, Alex
Subject: RE: Quick review please!!!!

Hi Heather,

I probably won't have time to read through this before 3pm, but I at least did a quick search on SCC and made a couple of relatively minor edits in footnote 10 on p. 39 – see attached. Feel free to fold these into your comments if you think it's worth it.

Thanks,

Elizabeth

From: Klemick, Heather
Sent: Tuesday, January 20, 2015 10:40 AM
To: Kopits, Elizabeth; Griffiths, Charles; Shadbegian, Ron
Cc: Wolverton, Ann; Evans, DavidA; Marten, Alex
Subject: FW: Quick review please!!!!

Forwarding this along in case folks have time and interest to comment today (before 3pm deadline).

From: Evans, DavidA
Sent: Tuesday, January 20, 2015 10:23 AM
To: Wolverton, Ann
Cc: Marten, Alex; Klemick, Heather
Subject: FW: Quick review please!!!!

Hi Ann,

Are you in today? (Do other's know if Ann is in?). I suspect you will circulate this to see who has time to comment? I'd like to, but am trying to catch up after being out.

Dave

From: McGartland, Al

Sent: Tuesday, January 20, 2015 10:16 AM

To: DeMocker, Jim; Gunning, Paul; Fawcett, Allen; Evans, DavidA; Marten, Alex; Klemick, Heather; Wolverton, Ann; Harvey, Reid; Helfand, Gloria; Simon, Karl; Goffman, Joseph

Cc: Beauvais, Joel; Barron, Alex; Bowen, Jennifer

Subject: Quick review please!!!!

Colleagues,

We just received (within the last 2 hours) a draft chapter to the Economic Report of the President (written by CEA). Unfortunately, the deadline for comments is Tuesday. Fortunately, I'm guessing we won't have many, if any major concerns with this draft.

Please send your comments to Jennifer Bowen and me. We will prepare a single set of EPA comments and work with OAR/Joel B. to figure out the best way to transmit them.

We are setting a firm deadline of Tuesday at 3:00 pm. CEA did send this earlier but as with other technical stuff, it didn't reach OAR or OP. CEA was kind enough to give us a new window of opportunity for review.

From: Kopits, Elizabeth

Location: TBD - **Conference code**

Importance: Normal

Subject: Accepted: Tentative HOLD SCC Kevin Rennert Meeting

Start Date/Time: Mon 7/27/2015 7:30:00 PM

End Date/Time: Mon 7/27/2015 8:30:00 PM

From: Kopits, Elizabeth

Location: **Conference code**

Importance: Normal

Subject: Accepted: NAS SCC kick-off agenda

Start Date/Time: Wed 7/22/2015 6:30:00 PM

End Date/Time: Wed 7/22/2015 7:00:00 PM

From: Kopits, Elizabeth
Location: Ken will send out conference line
Importance: Normal
Subject: Accepted: NAS SCC kick-off
Start Date/Time: Wed 7/22/2015 6:30:00 PM
End Date/Time: Wed 7/22/2015 7:00:00 PM

From: Kopits, Elizabeth
Location: Al's Conference Room
Importance: Normal
Subject: Accepted: SCC Team Check Meeting - Elizabeth K.
Start Date/Time: Thur 7/23/2015 6:00:00 PM
End Date/Time: Thur 7/23/2015 6:30:00 PM

To: Durham, Natalie[Durham.Natalie@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 8:06:18 PM
Subject: Re: Scheduling SCC check in meeting with Al?

Ok sounds good. Al and I discussed this morning that it would be good to have this meeting in advance of our meeting with Joel (currently scheduled for 7/28).

Re: call in number depends on when it is and if anyone happens to be teleworking at that time.

Thanks again,
Elizabeth

Sent from my iPhone

On Jul 15, 2015, at 4:02 PM, "Durham, Natalie" <Durham.Natalie@epa.gov> wrote:

I will need to check with Al before scheduling the meeting. Al is still in a meeting. Would you need a call in number?

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 3:38 PM
To: Durham, Natalie
Subject: RE: Scheduling SCC check in meeting with Al?

Yes. Thanks

From: Durham, Natalie
Sent: Wednesday, July 15, 2015 3:29 PM
To: Kopits, Elizabeth
Subject: RE: Scheduling SCC check in meeting with Al?

Ann W?

Natalie Durham

Environmental Protection Agency

National Center for Environmental Economics

1200 Pennsylvania Avenue NW

Washington, DC 20460

202-566-2289

Durham.natalie@epa.gov

From: Kopits, Elizabeth

Sent: Wednesday, July 15, 2015 2:09 PM

To: Durham, Natalie

Subject: Scheduling SCC check in meeting with Al?

Hi Natalie,

Can you schedule a ~45min SCC Team check in meeting with Al? The following folks should be included: Al, me, Alex, Steve, Charles, and Ann.

Monday the 27th (10-12 looks free) would be best for me, but looks like Wednesday the 22nd (12-2pm looks free) or Thursday the 23rd (2-3pm) could work for everyone too.

Thanks!

Elizabeth

To: Laity, Jim [EOP email/phone] Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Linn, Joshua [EOP email/phone] Gillingham,
Ken [EOP email/phone] Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 6:13:16 PM
Subject: RE: incorrect link on OMB SCC website

Super, thanks!

From: Laity, Jim [mailto:EOP email/phone]
Sent: Wednesday, July 15, 2015 12:23 PM
To: Kopits, Elizabeth; Shouse, Kate
Cc: Linn, Joshua; Gillingham, Ken; Marten, Alex
Subject: RE: incorrect link on OMB SCC website

Thx Elizabeth, I actually noticed this and pointed it out right after we went live, but I was out last week and I guess it slipped through the cracks. I will get fixed.

From: Kopits, Elizabeth [mailto:Kopits.Elizabeth@epa.gov]
Sent: Wednesday, July 15, 2015 11:34 AM
To: Shouse, Kate; Laity, Jim
Cc: Linn, Joshua; Gillingham, Ken; Marten, Alex
Subject: incorrect link on OMB SCC website

Hi Jim and Josh,

Kate just noticed that one of the links on the OMB SCC website is incorrect. See below. Can you forward to the keeper of the webpage and see if a correction is possible?

Thanks!

Elizabeth

From: Shouse, Kate
Sent: Wednesday, July 15, 2015 9:36 AM
To: Kopits, Elizabeth
Subject: incorrect link on OMB SCC website

Hi, Elizabeth. I just noticed that one of the TSD links on OMB's SCC page is incorrect; the bullet for the 2010 TSD incorrectly points to the Nov 2013 TSD. Everything else is correct on the site. Do you think that you or someone else in OP could notify Jim Laity and others in EOP? I'm happy to draft or send an email if you prefer. Thanks,
Kate

OMB SCC website: <https://www.whitehouse.gov/omb/oira/social-cost-of-carbon>

Last bullet is "Social Cost of Carbon for Regulatory Impact Analysis (Feb 2010)...". It currently links to <https://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>, which is the Nov 2013 version. This link should be replaced with: <https://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>

Thanks,
Kate

To: Shouse, Kate[Shouse.Kate@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 6:10:09 PM
Subject: RE: question from Robin K for website for SCC info

Yes. Good point. And good plan. We will try to get Joel's attention on this and show him the suggested paragraph.

Thanks!

From: Shouse, Kate
Sent: Wednesday, July 15, 2015 2:06 PM
To: Kopits, Elizabeth; Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Also, meant to say that even if people download the erratum and paper, they will likely see slightly different numbers from the RIA because we've made dollar year adjustments.

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 2:00 PM
To: Marten, Alex; Shouse, Kate
Subject: RE: question from Robin K for website for SCC info

Right. Sorry forgot about the WP. Was thinking of Marten and Newbold.

So, would revising the first parenthetical to "(Marten et al. 2014, 2015)" be enough?

From: Marten, Alex
Sent: Wednesday, July 15, 2015 1:37 PM
To: Kopits, Elizabeth; Shouse, Kate
Subject: RE: question from Robin K for website for SCC info

I think we would embed a link to the journal page on the article.
Which will have the link to the article (if they have access) and will

also have a link to corrigendum. There is no WP version.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 1:32 PM
To: Marten, Alex; Shouse, Kate
Subject: RE: question from Robin K for website for SCC info

And then is the idea to embed a link to the full peer review document Alex put together the other day? What about Marten et al.? I guess we can't link to the published version, correct? Would we have a link to the WP version? And how do we deal with the erratum? Do we need to reference it in some way to avoid any confusion about why the numbers in the white paper are different than those used in RIAs, or is the explanation provided in the RIAs sufficient?

From: Marten, Alex
Sent: Wednesday, July 15, 2015 1:23 PM
To: Shouse, Kate; Kopits, Elizabeth
Subject: RE: question from Robin K for website for SCC info

This makes sense to me. I would change "paper" to "study" in the paragraph, but otherwise I think it's probably the right length/info.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, July 15, 2015 9:07 AM
To: Kopits, Elizabeth
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Agreed. We do not have a separate SC-non-CO2 page and I envisioned adding it to the SC-CO2 page. In May, I drafted some text for a paragraph that would go at the bottom of the page. Haven't revisited this paragraph since adding the SC-CO2 updates but will likely start with it for any SC-non-CO2 updates:

Ex 5

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 8:59 AM
To: Shouse, Kate
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Yes, I can put this on his radar again.

Non-Responsive

Do we already have a separate SC-non CO2 page, or are we creating one, or would it just be added to the SC-CO2 page?

From: Shouse, Kate
Sent: Wednesday, July 15, 2015 8:42 AM
To: Kopits, Elizabeth
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Thanks and that's a good idea and easy enough to do. This reminds me that I don't think we closed out on the question of SC-CH4 updates on the web. While you were on leave, we discussed posting a pdf of the SC-CH4 letter review to the EPA SCC website. OP management didn't seem to have concerns about it but I think you wanted to check back with Joel to confirm. Have you had a chance to do so or can you put this on his radar soon?

Thanks,
Kate

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 8:36 AM
To: Shouse, Kate; Bowen, Jennifer; Kime, Robin
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Thanks, Kate. I think it looks good, and have just one comment.

If/when you can make any edits to it, think it would be nice to also embed a link to the main OMB SCC webpage (<https://www.whitehouse.gov/omb/oira/social-cost-of-carbon>) - maybe at the very end? Right now you have direct links to a few of the documents, but I think a link to the main page would be helpful too in case someone is interested in all versions of the TSD, earlier blog post etc. And presumably, new developments will be added to this same page.

Thanks,
Elizabeth

From: Shouse, Kate
Sent: Wednesday, July 15, 2015 8:24 AM
To: Kopits, Elizabeth; Bowen, Jennifer; Kime, Robin
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Hi, everyone. The updates to EPA's SCC website are now live – please see <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> and let me know if you have any questions (or see anything amiss). Thanks!

From: Kopits, Elizabeth
Sent: Thursday, July 09, 2015 4:05 PM
To: Bowen, Jennifer; Kime, Robin
Cc: Marten, Alex; Shouse, Kate
Subject: RE: question from Robin K for website for SCC info

Hi Jenny and Robin,

If you are looking for an EPA website on SCC, it is: <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> . However, I don't think this has been updated yet to reflect the recent revision, etc. Kate Shouse (ccd above) might be able to tell you when we are likely to update it.

However, the 7/2 OMB blog post (<https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>) provides the most recent info and includes links to the current TSD and response to public comments received through the recent OMB comment solicitation.

Hope this helps.

Thanks,

Elizabeth

From: Bowen, Jennifer
Sent: Thursday, July 09, 2015 3:57 PM
To: Kopits, Elizabeth; Marten, Alex
Cc: Kime, Robin
Subject: question from Robin K for website for SCC info

What is the best website to point folks to for more info re: SCC?

Thank you.

Jenny

From: Kopits, Elizabeth
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: SCC-NAS Update
Start Date/Time: Tue 7/28/2015 2:00:00 PM
End Date/Time: Tue 7/28/2015 2:30:00 PM

To: Durham, Natalie[Durham.Natalie@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 2:31:19 PM
Subject: RE: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Turns out the Canadians offered the use of their conference line. So can you update the invite with this call in info:

Dial-in number:


Conference ID:

Conference code

Thanks!

Elizabeth

From: Durham, Natalie
Sent: Wednesday, July 15, 2015 9:34 AM
To: Kopits, Elizabeth
Subject: RE: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Yes, also the pin is  Thanks

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:32 AM
To: Durham, Natalie
Subject: RE: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Thanks for scheduling the meeting. Is it on Al's calendar now too? I only saw you and me as attendees.

Thanks,

Elizabeth

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:21 AM
To: Durham, Natalie
Cc: McGartland, Al
Subject: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Hi Natalie,

Can you add an invite to Al's calendar for 10-10:30AM next Wednesday the 22nd entitled 'call with Environment Canada on SCC'? See email chain below for background. It will just be him and me joining the meeting. Also, can we use Al's conference call-in info if needed? Can you send it to me so that I can initiate the call? (I will be teleworking that day.)

Thanks!

Elizabeth

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:08 AM
To: McGartland, Al
Subject: RE: Social Cost of Carbon/Methane Update

Ok sounds good. Thanks!

From: McGartland, Al
Sent: Wednesday, July 15, 2015 9:07 AM
To: Kopits, Elizabeth
Subject: Re: Social Cost of Carbon/Methane Update

I think I can make either time. All the conflicts are internal meetings that can be moved.

I don't think we need to involve Kevin. We can let them know it's scheduled. And if by chance I can't make it in fine with you doing this without me.

Sent from my iPhone

On Jul 15, 2015, at 7:42 AM, Kopits, Elizabeth <Kopits.Elizabeth@epa.gov> wrote:

Hi Al,

The Canadians want to have a check in on SCC. See email chain below. The staff person in their Econ shop who periodically calls me with SCC questions, John Cuddihy, seems to have left on another assignment recently, so I imagine Christian would just like to touch base and ask questions about the recent developments. I expect this to be a simple technical discussion only so I feel perfectly comfortable doing the call on my own, but wanted to give you a heads up about it in case you would like to join, or if you think someone like Kevin should be looped in too. (Sounds like his manager and director will join the call.)

You currently have conflicts with both of time slots they have suggested below, but if you would like to join please let me know and I can suggest some other times to them.

Thanks,

Elizabeth

From: Michaud,Christian [NCR] [<mailto:Christian.Michaud@ec.gc.ca>]

Sent: Tuesday, July 14, 2015 4:12 PM

To: Kopits, Elizabeth

Subject: RE: Social Cost of Carbon/Methane Update

Hi Elizabeth,

Thank you very much for your quick response.

I hadn't seen the OMB blog on the update, but I have learned through other news outlets about the response to public comments, revisions to the TSD as well as the NAS peer-review process. I have reviewed the updated Technical Update paper and shared the information with my Chris and Warren, so we do have an understanding of what was changed in the methodology. With that said, I will review the post of the blog to ensure that I didn't miss anything on this.

As for timing of the call, it seems like all of us would be available on Wednesday the 22nd between 10 AM and 11 AM, and Thursday the 23rd between 1 PM and 2 PM. Would there be a half-hour time slot that would work for you at those times?

Best regards,

Christian Michaud

Personal cell/email

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]
Sent: July 14, 2015 4:00 PM
To: Michaud,Christian [NCR]
Subject: Re: Social Cost of Carbon/Methane Update

Hi Christian,

Yes I would happy to talk any time. Next week either Wednesday or Thursday would be best. This week would be fine too.

In the meantime have you seen the 7/2 OMB blog post on SCC? It summarizes the latest

developments and provides links to the new files.

Please feel free to suggest a couple of times that might work on your end. Looking forward to speaking soon.

Regards,

Elizabeth

Sent from my iPhone

On Jul 14, 2015, at 3:40 PM, "Michaud,Christian [NCR]" <Christian.Michaud@ec.gc.ca> wrote:

Hello Elizabeth,

My name is Christian Michaud from the Economic Analysis Directorate at Environment Canada. Previously, I worked under John Cuddihy, who was in touch with you about developments around the Social Cost of Carbon. As he left on an assignment recently, I've been asked to take over the lead on this file.

Recently, we have seen quite a few developments around the SCCO2 and SCCH4, and were wondering whether it would be possible for my new director, Warren Goodlet, my manager, Chris Adams, and myself to have a quick chat with you sometime next week in order to have a better understanding of what might be expected in the next few months on those files.

Please let me know if that would work for you.

Best regards,

Christian Michaud

Economist | Économiste

Economic Analysis Directorate | Direction de l'analyse économique

Strategic Policy Branch | Direction générale de la politique stratégique

Environment Canada | Environnement Canada

10, rue Wellington

Gatineau QC K1A 0H3

Christian.Michaud@ec.gc.ca

Telephone | Téléphone 819-956-5146

Facsimile | Télécopieur 819-953-3241

Government of Canada | Gouvernement du Canada

Website | Site Web www.ec.gc.ca

To: Michaud,Christian [NCR][Christian.Michaud@ec.gc.ca]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 2:30:33 PM
Subject: RE: Social Cost of Carbon/Methane Update

Super, thanks! Talk to you then.

Elizabeth

From: Michaud,Christian [NCR] [<mailto:Christian.Michaud@ec.gc.ca>]
Sent: Wednesday, July 15, 2015 10:13 AM
To: Kopits, Elizabeth
Subject: RE: Social Cost of Carbon/Methane Update

Hi Elizabeth,

Next Wednesday at 10-10:30AM sounds good for us. We do have a conference call line. Here is the call-in info:

Dial-in number:

Conference ID:

Conference code

Thanks,

Christian Michaud

819-956-5146

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]

Sent: July 15, 2015 9:13 AM
To: Michaud,Christian [NCR]
Subject: RE: Social Cost of Carbon/Methane Update

Hi Christian,

Let's say 10-10:30AM next Wednesday the 22nd. I think it might be easiest for us to use a conference call line because my boss, Al McGartland, will likely be joining as well and I will likely be working remotely that day. If you don't have one handy, I am happy to send a call-in number we can use.

Thanks,
Elizabeth

From: Michaud,Christian [NCR] [<mailto:Christian.Michaud@ec.gc.ca>]
Sent: Tuesday, July 14, 2015 4:12 PM
To: Kopits, Elizabeth
Subject: RE: Social Cost of Carbon/Methane Update

Hi Elizabeth,

Thank you very much for your quick response.

I hadn't seen the OMB blog on the update, but I have learned through other news outlets about the response to public comments, revisions to the TSD as well as the NAS peer-review process. I have reviewed the updated Technical Update paper and shared the information with my Chris and Warren, so we do have an understanding of what was changed in the methodology. With that said, I will review the post of the blog to ensure that I didn't miss anything on this.

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between 10 AM and 11 AM, and Thursday the 23rd between 1 PM and 2 PM. Would there be a half-hour time slot that would work for you at those times?

Best regards,

Christian Michaud

Personal cell/email

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]
Sent: July 14, 2015 4:00 PM
To: Michaud,Christian [NCR]
Subject: Re: Social Cost of Carbon/Methane Update

Hi Christian,

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Please feel free to suggest a couple of times that might work on your end. Looking forward to speaking soon.

Regards,

Elizabeth

Sent from my iPhone

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Hello Elizabeth,

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Recently, we have seen quite a few developments around the SCCO2 and SCCH4, and were wondering whether it would be possible for my new director, Warren Goodlet, my manager, Chris Adams, and myself to have a quick chat with you sometime next week in order to have a better understanding of what might be expected in the next few months on those files.

Please let me know if that would work for you.

Best regards,

Christian Michaud

Economist | Économiste

Economic Analysis Directorate | Direction de l'analyse économique

Strategic Policy Branch | Direction générale de la politique stratégique

Environment Canada | Environnement Canada

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Facsimile | Télécopieur 819-953-3241

Government of Canada | Gouvernement du Canada


Website | Site Web www.ec.gc.ca

To: Durham, Natalie[Durham.Natalie@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 1:34:35 PM
Subject: Re: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Thanks

Sent from my iPhone

On Jul 15, 2015, at 9:33 AM, "Durham, Natalie" <Durham.Natalie@epa.gov> wrote:

Yes, also the pin is  Thanks

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:32 AM
To: Durham, Natalie
Subject: RE: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Thanks for scheduling the meeting. Is it on Al's calendar now too? I only saw you and me as attendees.

Thanks,

Elizabeth

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:21 AM
To: Durham, Natalie
Cc: McGartland, Al
Subject: scheduling call on SCC for next Wednesday, 7/22, 10-10:30AM

Hi Natalie,

Can you add an invite to Al's calendar for 10-10:30AM next Wednesday the 22nd entitled 'call with Environment Canada on SCC'? See email chain below for background. It will just

be him and me joining the meeting. Also, can we use Al's conference call-in info if needed? Can you send it to me so that I can initiate the call? (I will be teleworking that day.)

Thanks!

Elizabeth

From: Kopits, Elizabeth
Sent: Wednesday, July 15, 2015 9:08 AM
To: McGartland, Al
Subject: RE: Social Cost of Carbon/Methane Update

Ok sounds good. Thanks!

From: McGartland, Al
Sent: Wednesday, July 15, 2015 9:07 AM
To: Kopits, Elizabeth
Subject: Re: Social Cost of Carbon/Methane Update

I think I can make either time. All the conflicts are internal meetings that can be moved.

I don't think we need to involve Kevin. We can let them know it's scheduled. And if by chance I can't make it in fine with you doing this without me.

Sent from my iPhone

On Jul 15, 2015, at 7:42 AM, Kopits, Elizabeth <Kopits.Elizabeth@epa.gov> wrote:

Hi Al,

The Canadians want to have a check in on SCC. See email chain below. The staff person in their Econ shop who periodically calls me with SCC questions, John Cuddihy, seems to have left on another assignment recently, so I imagine Christian would just like to touch base and ask questions about the recent developments. I expect this to be a simple technical discussion only so I feel perfectly comfortable doing the call on my own, but wanted to give you a heads up about it in case you would like to join, or if you think someone like Kevin should be looped in too. (Sounds like his manager and director will join the call.)

You currently have conflicts with both of time slots they have suggested below, but if you would like to join please let me know and I can suggest some other times to them.

Thanks,

Elizabeth

From: Michaud,Christian [NCR] [<mailto:Christian.Michaud@ec.gc.ca>]
Sent: Tuesday, July 14, 2015 4:12 PM
To: Kopits, Elizabeth
Subject: RE: Social Cost of Carbon/Methane Update

Hi Elizabeth,

Thank you very much for your quick response.

I hadn't seen the OMB blog on the update, but I have learned through other news outlets about the response to public comments, revisions to the TSD as well as the NAS peer-review process. I have reviewed the updated Technical Update paper and shared the information with my Chris and Warren, so we do have an understanding of what was changed in the methodology. With that said, I will review the post of the blog to ensure that I didn't miss anything on this.

As for timing of the call, it seems like all of us would be available on Wednesday the 22nd between 10 AM and 11 AM, and Thursday the 23rd between 1 PM and 2 PM. Would there be a half-hour time slot that would work for you at those times?

Best regards,

Christian Michaud

Personal cell/email

From: Kopits, Elizabeth [<mailto:Kopits.Elizabeth@epa.gov>]
Sent: July 14, 2015 4:00 PM
To: Michaud, Christian [NCR]
Subject: Re: Social Cost of Carbon/Methane Update

Hi Christian,

Yes I would happy to talk any time. Next week either Wednesday or Thursday would be best. This week would be fine too.

In the meantime have you seen the 7/2 OMB blog post on SCC? It summarizes the latest developments and provides links to the new files.

Please feel free to suggest a couple of times that might work on your end. Looking forward to speaking soon.

Regards,

Elizabeth

Sent from my iPhone

On Jul 14, 2015, at 3:40 PM, "Michaud,Christian [NCR]"
<Christian.Michaud@ec.gc.ca> wrote:

Hello Elizabeth,

My name is Christian Michaud from the Economic Analysis Directorate at Environment Canada. Previously, I worked under John Cuddihy, who was in touch with you about developments around the Social Cost of Carbon. As he left on an assignment recently, I've been asked to take over the lead on this file.

Recently, we have seen quite a few developments around the SCCO2 and SCCH4, and were wondering whether it would be possible for my new director, Warren Goodlet, my manager, Chris Adams, and myself to have a quick chat with you sometime next week in order to have a better understanding of what might be expected in the next few months on those files.

Please let me know if that would work for you.

Best regards,

Christian Michaud

Economist | Économiste

Economic Analysis Directorate | Direction de l'analyse économique

Strategic Policy Branch | Direction générale de la politique stratégique

Environment Canada | Environnement Canada

10, rue Wellington

Gatineau QC K1A 0H3

Christian.Michaud@ec.gc.ca

Telephone | Téléphone 819-956-5146

Facsimile | Télécopieur 819-953-3241

Government of Canada | Gouvernement du Canada

Website | Site Web www.ec.gc.ca

To: Rennert, Kevin[Rennert.Kevin@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]
Cc: Beauvais, Joel[Beauvais.Joel@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/15/2015 11:20:59 AM
Subject: RE: SCC / NAS

Super! I am here so feel free to call me whenever you get in. 566-2299. My first meeting isn't until 9:30.

Thanks,

Elizabeth

From: Rennert, Kevin
Sent: Tuesday, July 14, 2015 5:05 PM
To: Kopits, Elizabeth; McGartland, Al
Cc: Beauvais, Joel
Subject: SCC / NAS

Elizabeth, could we check in briefly on the SCC / NAS report in the morning? I was able to

Ex 5

Thanks. -Kevin

Cc: Rennert, Kevin[Rennert.Kevin@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Roberts, Martha[Roberts.Martha@epa.gov]
To: Beauvais, Joel[Beauvais.Joel@epa.gov]
From: Kopits.Elizabeth@epa.gov
Sent: Tue 7/21/2015 9:45:32 PM
Subject: Re: 7.21.2015_JMI et al to EPA re SCC docs.pdf

Thanks Joel. Our next SCC meeting with you is currently scheduled for next Tuesday (7/28) am. But please let me know if you would like to talk before then too.

Elizabeth

Sent from my iPhone

> On Jul 21, 2015, at 5:30 PM, "Beauvais, Joel" <Beauvais.Joel@epa.gov> wrote:
>
> FYI - we can discuss further when appropriate
>
> <7.21.2015_JMI et al to EPA re SCC docs.pdf>
>
>
>
>

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Wolverton, Ann
Sent: Thur 7/2/2015 9:26:16 PM
Subject: Automatic reply: FYI SCC blog post is live

Hi,

I am out of the office tthrough July 9th. If it isn't an urgent matter, I will reply on my return.

Regards,

Ann

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; McGartland, Al[McGartland.Al@epa.gov];
Beauvais, Joel[Beauvais.Joel@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Fawcett,
Allen[Fawcett.Allen@epa.gov]
From: Marten, Alex
Sent: Thur 7/2/2015 9:18:06 PM
Subject: FYI SCC blog post is live

<https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Beauvais, Joel
Sent: Wed 7/1/2015 7:35:52 PM
Subject: Automatic reply: FYI - OMB will be releasing the Social cost of carbon (SCC) response to public comments tomorrow

Non-Responsive

Non-Responsive

If you need immediate assistance on an Office of Policy matter, please contact Robin Kime, at kime.robin@epa.gov.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Griffiths, Charles
Sent: Tue 6/30/2015 6:51:57 PM
Subject: Automatic reply: revised list of SCC panel recommendations

Non-Responsive

From: Linn, Joshua
Location: Call number TBD
Importance: Normal
Subject: SCC
Start Date/Time: Thur 6/25/2015 2:30:00 PM
End Date/Time: Thur 6/25/2015 3:30:00 PM

;

I will send the call-in info as soon as possible.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
From: Pineau, Marisa Gerstein
Sent: Wed 6/24/2015 11:35:03 PM
Subject: Out of Office: NAS/SCC conference call?

Non-Responsive

To: Simon, Nathalie[Simon.Nathalie@epa.gov]
From: Kopits, Elizabeth
Sent: Tue 7/14/2015 2:20:12 PM
Subject: agenda for this afternoon's update meeting?

Hi Nathalie,

Is the update meeting with Joel still on? If so, can you add “SCC – NAS update” to the agenda?

Non-responsive

Thanks,

Elizabeth

To: Shouse, Kate[Shouse.Kate@epa.gov]
From: Kopits, Elizabeth
Sent: Mon 7/13/2015 4:55:55 PM
Subject: RE: SCC memo is in the HD2 docket, which opened today

Thanks!

From: Shouse, Kate
Sent: Monday, July 13, 2015 12:27 PM
To: Kopits, Elizabeth; Marten, Alex
Subject: FYI: SCC memo is in the HD2 docket, which opened today

In case you want this reference in your files, the memo is at
<http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2014-0827-0437>

From: Brunner, Christine
Sent: Monday, July 13, 2015 11:46 AM
To: HD GHG 2
Subject: HDGHG Docket items posted at Regulations.gov

<http://www.regulations.gov/#!searchResults;rpp=25;po=0;a=EPA;dktid=EPA-HQ-OAR-2014-0827>

Cc: Shouse, Kate[Shouse.Kate@epa.gov]; Fulcher, Charles[Fulcher.Charles@epa.gov]
To: Ward, Hillary[Ward.Hillary@epa.gov]
From: Kopits, Elizabeth
Sent: Fri 7/10/2015 4:21:40 PM
Subject: Fw: Peer Review of Social Cost of Methane Methodology
[methanedocument1_final, Fisher-Vanden.pdf](#)
[EPA Review \(1\).docx](#)
[Peer review of EPA SC-CH4 methodology Jan 15 2015.pdf](#)

Hi Hillary,

Per our conversation, here are the 3 peer reviewer responses. When transmitting to OMB,

Ex 5

Ex 5

Thanks,

Elizabeth

To: Shouse, Kate[Shouse.Kate@epa.gov]; Bowen, Jennifer[Bowen.Jennifer@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 7/9/2015 8:13:45 PM
Subject: RE: question from Robin K for website for SCC info

Thanks, Kate! I didn't know about the new scc specific OMB webpage.

Elizabeth

From: Shouse, Kate
Sent: Thursday, July 09, 2015 4:12 PM
To: Kopits, Elizabeth; Bowen, Jennifer; Kime, Robin
Cc: Marten, Alex
Subject: RE: question from Robin K for website for SCC info

Thanks, Elizabeth. We are working to update the EPA website and hope it goes live by end of this week or early next week. I can email everyone on this message once it's finished. The contractor is making changes now; we'll proofread it offline, then press go.

Also, I may be the last one to find this but OMB created an SCC page that consolidates the TSDs, RTC, and all of the relevant blog posts at <https://www.whitehouse.gov/omb/oira/social-cost-of-carbon> . I think the links Elizabeth listed below are the best (pending the update to EPA's site) but wanted to flag this in case others missed it.

Thanks,
Kate

From: Kopits, Elizabeth
Sent: Thursday, July 09, 2015 4:05 PM
To: Bowen, Jennifer; Kime, Robin
Cc: Marten, Alex; Shouse, Kate
Subject: RE: question from Robin K for website for SCC info

Hi Jenny and Robin,

If you are looking for an EPA website on SCC, it is:
<http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> . However, I don't think this has been updated yet to reflect the recent revision, etc. Kate Shouse (ccd above) might be able to tell you when we are likely to update it.

However, the 7/2 OMB blog post (<https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>) provides the most recent info and includes links to the current TSD and response to public comments received through the recent OMB comment solicitation.

Hope this helps.

Thanks,

Elizabeth

From: Bowen, Jennifer
Sent: Thursday, July 09, 2015 3:57 PM
To: Kopits, Elizabeth; Marten, Alex
Cc: Kime, Robin
Subject: question from Robin K for website for SCC info

What is the best website to point folks to for more info re: SCC?

Thank you.

Jenny

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 7/1/2015 6:57:48 PM
Subject: RE: help on write-up
[draft scc shout out.docx](#)

Hi Jenny,

Sorry for the delay. Here is a start,

Non-Responsive

Non-Responsive

Please let me know if you would like to discuss. I am out tomorrow (since I assume that the in lieu of holiday is tomorrow for folks who are compressed on Friday?), but can be available to talk if needed. Also happy to help more on it next week.

Thanks again! I really appreciate the shout-out nomination! :)
Elizabeth

-----Original Message-----

From: Bowen, Jennifer
Sent: Wednesday, July 01, 2015 12:38 PM
To: Kopits, Elizabeth
Subject: Re: help on write-up

Perfect, thanks.

> On Jul 1, 2015, at 12:36 PM, Kopits, Elizabeth <Kopits.Elizabeth@epa.gov> wrote:

>

> Yes, it is on the top of my to do list. Will try to send along in the next hour or so.

>

> -----Original Message-----

> From: Bowen, Jennifer
> Sent: Wednesday, July 01, 2015 12:07 PM
> To: Kopits, Elizabeth
> Subject: RE: help on write-up

>

> Hi Elizabeth,

> Just a reminder if you have time to send this sometime today, that would be great. Thank you.

>

> Jenny

>

> 566-2281

>

>

>

>

>

> _____
> From: Bowen, Jennifer
> Sent: Thursday, June 25, 2015 5:28 PM
> To: Kopits, Elizabeth
> Subject: RE: help on write-up

>

> Next week by Wednesday (given the short week) would be great. Thank you!

>

> Jenny

>
> From: Kopits, Elizabeth
> Sent: Thursday, June 25, 2015 5:25 PM
> To: Bowen, Jennifer
> Subject: Re: help on write-up
>
> Ok sure, no problem. Is this for tomorrow or would early next week be ok? Thanks!
>
> Sent from my iPhone
>
> On Jun 25, 2015, at 4:54 PM, "Bowen, Jennifer"
> <Bowen.Jennifer@epa.gov<mailto:Bowen.Jennifer@epa.gov>> wrote:
> Hi Elizabeth,
>
> We'd like to put forward a "shout-out" for your leadership on the "Response to comments" and NAS
proposal for Social Cost of Carbon. Would you be able to write a draft of this since you know better than
anyone? We'd also like to mention the contributions from Alex and Steve and possibly others if
appropriate (Ann?) but first acknowledge your role.
>
> Thanks for your help - if there is something I might look at that would allow me to draft it, that would be
fine, too.
>
> Jenny

To: Massey, Matt[Massey.Matt@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Tue 6/30/2015 4:56:31 PM
Subject: ELG

Hi Matt,

As I mentioned at the bi-weekly, feel free to bug us if you need help reviewing the climate benefits part of the ELG package. I'm happy to look over the SCC section if you'd like.

Elizabeth

From: Kopits, Elizabeth

Location: **Conference code**

Importance: Normal

Subject: Accepted: SCC

Start Date/Time: Thur 6/25/2015 2:30:00 PM

End Date/Time: Thur 6/25/2015 3:30:00 PM

To: Thundiyil, Karen[Thundiyil.Karen@epa.gov]
Cc: Moore, Chris[Moore.Chris@epa.gov]
From: Kopits, Elizabeth
Sent: Fri 6/12/2015 3:55:03 PM
Subject: Re: Revised Landfills Emission Guidelines Pkg - OP Comments

Yes it should have the corrected benefit numbers and additional language about NAS SCC review etc.

Thanks,
Elizabeth

> On Jun 12, 2015, at 11:32 AM, "Thundiyil, Karen" <Thundiyil.Karen@epa.gov> wrote:
>
> The revised RIA...I don't think we have that, or the revised NSPS w/ a revised benefits section.
> Just to confirm, the revised RIA has the new CH4 monetized benefit value? Is that the primary change, or is it something else?
>
> I'll look into it. Thank you.
>
> -----Original Message-----
> From: Kopits, Elizabeth
> Sent: Friday, June 12, 2015 11:28 AM
> To: Thundiyil, Karen
> Cc: Moore, Chris
> Subject: Re: Revised Landfills Emission Guidelines Pkg - OP Comments
>
> Thanks Karen. I will try to give it a final look this afternoon. Have they sent you the revised supplemental yet too? And the combined RIA?
>
> Thanks,
> Elizabeth
>
>
>
>> On Jun 12, 2015, at 10:42 AM, "Thundiyil, Karen" <Thundiyil.Karen@epa.gov> wrote:
>>
>> Latest version of Landfills EG
>>
>> From: Rush, Alan
>> Sent: Friday, June 12, 2015 10:40 AM
>> To: Adams, Darryl
>> Cc: Morgan, Ruthw; Henigin, Mary; Thundiyil, Karen
>> Subject: FW: Revised Landfills Emission Guidelines Pkg - OP Comments
>>
>> Darryl,
>>
>> Attached is the revised version of the Landfills EG. Do you need a paper copy or two? I attached the RLSO for Karen's benefit.
>>
>> Alan
>>
>> From: Eck, Janet
>> Sent: Thursday, June 11, 2015 12:46 PM
>> To: Rush, Alan

To: Thundiyil, Karen[Thundiyil.Karen@epa.gov]
Cc: Moore, Chris[Moore.Chris@epa.gov]
From: Kopits, Elizabeth
Sent: Fri 6/12/2015 3:55:03 PM
Subject: Re: Revised Landfills Emission Guidelines Pkg - OP Comments

Yes it should have the corrected benefit numbers and additional language about NAS SCC review etc.

Thanks,
Elizabeth

> On Jun 12, 2015, at 11:32 AM, "Thundiyil, Karen" <Thundiyil.Karen@epa.gov> wrote:
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> The revised RIA...I don't think we have that, or the revised NSPS w/ a revised benefits section.
> Just to confirm, the revised RIA has the new CH4 monetized benefit value? Is that the primary change, or is it something else?
>
> I'll look into it. Thank you.
>
> -----Original Message-----
> From: Kopits, Elizabeth
> Sent: Friday, June 12, 2015 11:28 AM
> To: Thundiyil, Karen
> Cc: Moore, Chris
> Subject: Re: Revised Landfills Emission Guidelines Pkg - OP Comments
>
> Thanks Karen. I will try to give it a final look this afternoon. Have they sent you the revised supplemental yet too? And the combined RIA?
>
> Thanks,
> Elizabeth
>
>
>
>> On Jun 12, 2015, at 10:42 AM, "Thundiyil, Karen" <Thundiyil.Karen@epa.gov> wrote:
>>
>> Latest version of Landfills EG
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>> From: Rush, Alan
>> Sent: Friday, June 12, 2015 10:40 AM
>> To: Adams, Darryl
>> Cc: Morgan, Ruthw; Henigin, Mary; Thundiyil, Karen
>> Subject: FW: Revised Landfills Emission Guidelines Pkg - OP Comments
>>
>> Darryl,
>>
>> Attached is the revised version of the Landfills EG. Do you need a paper copy or two? I attached the RLSO for Karen's benefit.
>>
>> Alan
>>
>> From: Eck, Janet
>> Sent: Thursday, June 11, 2015 12:46 PM
>> To: Rush, Alan

>> Cc: Marsh, Karen; Ward, Hillary; Cozzie, David; Fruh, Steve; Thompson,
>> Fred

>> Subject: Revised Landfills Emission Guidelines Pkg - OP Comments

>>

>> Hi Alan, Attached is an updated version of the Emission Guidelines for MSW Landfills (SAN 4846.1) that addresses comments received from Karen Thundiyil and Elizabeth Kopits in OP. Also attached is a redline/strikeout version that highlights comments received and changes made. Please forward through OAR and back to OP for review. Thanks.

>>

>> <EO 12866 Landfills EG 2060 AS23 NPRM 20150611.docx> <EO 12866

>> Landfills EG 2060 AS23 NPRM 20150611_tracked.docx>

>> Cc: Marsh, Karen; Ward, Hillary; Cozzie, David; Fruh, Steve; Thompson,
>> Fred

>> Subject: Revised Landfills Emission Guidelines Pkg - OP Comments

>>

>> Hi Alan, Attached is an updated version of the Emission Guidelines for MSW Landfills (SAN 4846.1) that addresses comments received from Karen Thundiyil and Elizabeth Kopits in OP. Also attached is a redline/strikeout version that highlights comments received and changes made. Please forward through OAR and back to OP for review. Thanks.

>>

>> <EO 12866 Landfills EG 2060 AS23 NPRM 20150611.docx> <EO 12866

>> Landfills EG 2060 AS23 NPRM 20150611_tracked.docx>

From: Kopits, Elizabeth
Importance: Normal
Subject: Accepted: scc check in
Start Date/Time: Fri 6/12/2015 1:30:00 PM
End Date/Time: Fri 6/12/2015 2:00:00 PM

To: David Chapman[DChapman@stratusconsulting.com]
From: Kopits, Elizabeth
Sent: Wed 6/10/2015 7:53:10 PM
Subject: RE: Nice talking with you yesterday

Hi David,

Thanks so much! This is really nice of you. It was great meeting you in person yesterday too.
I'm sure we will talk again soon.

Regards,

Elizabeth

From: David Chapman [mailto:DChapman@stratusconsulting.com]
Sent: Wednesday, June 10, 2015 2:47 PM
To: Kopits, Elizabeth
Subject: Nice talking with you yesterday

Elizabeth,

Thanks for taking the time to talk with us yesterday. I enjoyed meeting you in person and our discussions.

Since the files for the filed testimony in the Minnesota SCC contested case hearings are so many and large, I put them up on our FTP site:

<ftp.stratusconsulting.com>

User:

Ex 6 - Other

PWD:

You should see two folders – one is the comments received by OMB, the other is the testimony and supporting documents filed in the MN contested case hearing. Let me know if you have any issues trying to access these files. This is all public information.

I have also asked our MN client if they are OK with me sending you our spreadsheet analysis of the comments OMB received on the SCC.

I'll let you know about that as soon as I hear back.

Regards,

David

This electronic message and any attachments hereto are the property of the sender and may contain information that is confidential or proprietary to the sender. It is intended for the exclusive use of the recipient or recipients named above. If you are not an intended recipient of the message, please be advised that you are not authorized to disclose, copy, or distribute the message or any information in the message. Please notify the sender of your receipt immediately by return electronic e-mail and delete the message and any attachments. Although this e-mail and any attachments are believed to be free of any virus or other defect that might affect any computer system into which it is received and opened, it is the responsibility of the recipient to ensure that it is virus free and no responsibility is accepted by the sender for any loss or damage arising in any way from its use.

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Work Product Prepared Under Direction of Counsel
Protected by Federal Rule of Evidence 408*

To: CurryBrown, Amanda[CurryBrown.amanda@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 6/4/2015 12:17:27 PM
Subject: Re: Discuss SCC with OAQPS AQ/Climate Group?

Sure thing. Thanks so much for sending this along!

Talk to you again soon.

Best,

Elizabeth

From: CurryBrown, Amanda
Sent: Wednesday, June 3, 2015 12:54 PM
To: Kopits, Elizabeth; Shouse, Kate; Marten, Alex
Subject: RE: Discuss SCC with OAQPS AQ/Climate Group?

Elizabeth, Kate, & Alex,

Thanks again for joining us yesterday. I've attached the Fann et al paper that Pat mentioned on the call. Please let us know if you have any questions or would like to discuss.

Look forward to continuing to work with you all,

Amanda

From: Kopits, Elizabeth
Sent: Monday, June 01, 2015 7:52 AM
To: CurryBrown, Amanda; Shouse, Kate; Marten, Alex
Subject: RE: Discuss SCC with OAQPS AQ/Climate Group?

Hi Amanda,

Attached is our standard SCC briefing deck, most recently used for an ORD briefing back in February. If you think it would be helpful for the folks joining tomorrow's meeting, please feel free to circulate. We will also be happy to answer other questions that anyone has, and to provide a brief update on recent developments (e.g., recent OMB comment period, etc).

Hope this helps!

Thanks,

Elizabeth

From: CurryBrown, Amanda
Sent: Monday, May 18, 2015 8:57 AM
To: Shouse, Kate; Marten, Alex
Cc: Kopits, Elizabeth
Subject: Re: Discuss SCC with OAQPS AQ/Climate Group?

Thanks to all of you!

Neal Fann is a big fan of using Lync for meetings... we've used it a lot with people from other countries since we don't have a toll-free international line and can't Skype. Now that we have a conference room with a proper display it is pretty nice.

From: Shouse, Kate
Sent: Monday, May 18, 2015 8:18 AM
To: Marten, Alex; CurryBrown, Amanda
Cc: Kopits, Elizabeth
Subject: RE: Discuss SCC with OAQPS AQ/Climate Group?

Likewise, my calendar is open June 2/3 pm and happy to participate.

I didn't realize we could do meetings through Lync – I've only used it for the instant messaging

feature so far.

From: Marten, Alex
Sent: Monday, May 18, 2015 8:11 AM
To: CurryBrown, Amanda; Shouse, Kate
Cc: Kopits, Elizabeth
Subject: RE: Discuss SCC with OAQPS AQ/Climate Group?

Hi Amanda,

Sure that would be fine. I don't know what Lync is, but we definitely have a briefing deck we could go through briefly and then answer any questions folks have.

June 2nd at 3pm is open on my schedule. Please include Elizabeth Kopits, she is the SCC lead for OP.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: CurryBrown, Amanda
Sent: Monday, May 18, 2015 6:42 AM
To: Shouse, Kate; Marten, Alex
Subject: Discuss SCC with OAQPS AQ/Climate Group?

Hi Kate & Alex,

OAQPS has group that meets monthly to discuss air quality and climate related issues. At our last meeting, there were a lot of questions related to SCC (what's included, how it

was developed, etc.) that Linda and I were only partially able to answer. I was wondering if you all (or anyone else who should be included) would be available for our next meeting to discuss the SCC. We could set up a Lync meeting if there were materials that would be useful to share.

We are currently scheduled to meet Tuesday, June 2 at 3pm, but are flexible if there is time/day that would work better for you.

Thanks a lot!

Amanda

To: Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 5/14/2015 5:27:06 PM
Subject: RE: SCC vs SC-CO2

Hmmm. I don't know. I feel like we have always used SCC in talking points, congressional letter responses, desk statements, the RTC, etc, up to now, and that is still what is used in press etc, right? So that makes me think we should stick with SCC in comms materials. At some point it might be good to move to SC-CO2 as the RIAs use that, and with more discussion of non-CO2 GHGs, but I don't know if we are there yet.

Just my opinion though.

From: Shouse, Kate
Sent: Thursday, May 14, 2015 1:21 PM
To: Kopits, Elizabeth
Cc: Marten, Alex
Subject: SCC vs SC-CO2

Thanks, Elizabeth. We've been using SC-CO2 in the RIAs to clarify where we're considering CO2 or non-CO2. Do you have a preference for SCC generally or just in the places you noted in the HD2 Q&A?

From: Kopits, Elizabeth
Sent: Thursday, May 14, 2015 11:21 AM
To: Shouse, Kate
Cc: Sarofim, Marcus; Marten, Alex
Subject: RE: Q&As for OTAQ on HD2?

Looks good. Here are just a few edits on the Q&A.

Thanks,

E.

From: Shouse, Kate
Sent: Thursday, May 14, 2015 10:49 AM
To: Kopits, Elizabeth
Cc: Sarofim, Marcus; Marten, Alex
Subject: RE: Q&As for OTAQ on HD2?

Thanks, Elizabeth. I've attached Ch 8 of the HD2 RIA plus an updated version of the Q&As and spreadsheet used to estimate how much the GHG benefits change with inclusion of non-CO2.

Marcus, FYI, updated Q&As attached, but the updates are on the SCC. The very high-level Q&A about why SC-CH4 is higher than SC-CO2 is the same as yesterday.

From: Kopits, Elizabeth
Sent: Thursday, May 14, 2015 10:43 AM
To: Shouse, Kate
Subject: RE: Q&As for OTAQ on HD2?

Hey Kate - Can you send me the HD2 RIA? It would help me to look at it for a few of these responses. Thanks!

From: Shouse, Kate
Sent: Wednesday, May 13, 2015 4:01 PM
To: Sarofim, Marcus; Kopits, Elizabeth; Marten, Alex
Cc: Fawcett, Allen
Subject: Q&As for OTAQ on HD2?

Do any of you have the time/interest to review these Q&As for OTAQ? OTAQ asked for some

Ex 5

Q&As on SC-CO2 and SC-CH4 that would be understood by a general audience. I've

Ex 5

I'm going to look these over again tomorrow (Thurs), please let me know if you want to weigh in before I send to OTAQ this week.

Thanks,
Kate

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
From: Kopits, Elizabeth
Sent: Thur 1/8/2015 8:58:40 PM
Subject: touching base
Kopits_current projects and key contacts_1.8.15.docx

Hi Jenny!

I'm so sorry we haven't had a chance to talk properly about my workload and upcoming leave.

I'm working at home tomorrow but perhaps we can meet early next week? (

Ex 6 - Other

Ex 6 - Other

I should still be here

through 1/23.)

Attached is a list of all my current projects and notes on who will be covering for me on various items. I have discussed this with all the folks mentioned in each section and with Al as well. I have also put a copy of this, along with all relevant files pertaining to various rules, etc., in the Kopits folder on the share drive.

Happy to chat more about this, and timesheets, etc., on Monday or Tuesday whenever works best for you.

Thanks!

Elizabeth

To: Marten, Alex[Marten.Alex@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 1/7/2015 5:12:46 PM
Subject: RE: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Non-Responsive

From: Marten, Alex
Sent: Tuesday, January 06, 2015 12:48 PM
To: Wolverton, Ann; Kopits, Elizabeth; Newbold, Steve; Griffiths, Charles
Subject: RE: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Wolverton, Ann
Sent: Tuesday, January 06, 2015 12:41 PM
To: Kopits, Elizabeth; Marten, Alex; Newbold, Steve; Griffiths, Charles
Subject: Fwd: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Have you guys seen this?

Sent from my iPhone

Begin forwarded message:

From: "NCSE Conference" <conference@ncseonline.org>
Date: January 6, 2015 at 12:18:56 PM EST

To: Marten, Alex[Marten.Alex@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]
From: Kopits, Elizabeth
Sent: Wed 1/7/2015 5:12:46 PM
Subject: RE: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Non-Responsive

From: Marten, Alex
Sent: Tuesday, January 06, 2015 12:48 PM
To: Wolverton, Ann; Kopits, Elizabeth; Newbold, Steve; Griffiths, Charles
Subject: RE: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Wolverton, Ann
Sent: Tuesday, January 06, 2015 12:41 PM
To: Kopits, Elizabeth; Marten, Alex; Newbold, Steve; Griffiths, Charles
Subject: Fwd: The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference

Have you guys seen this?

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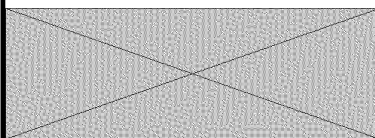
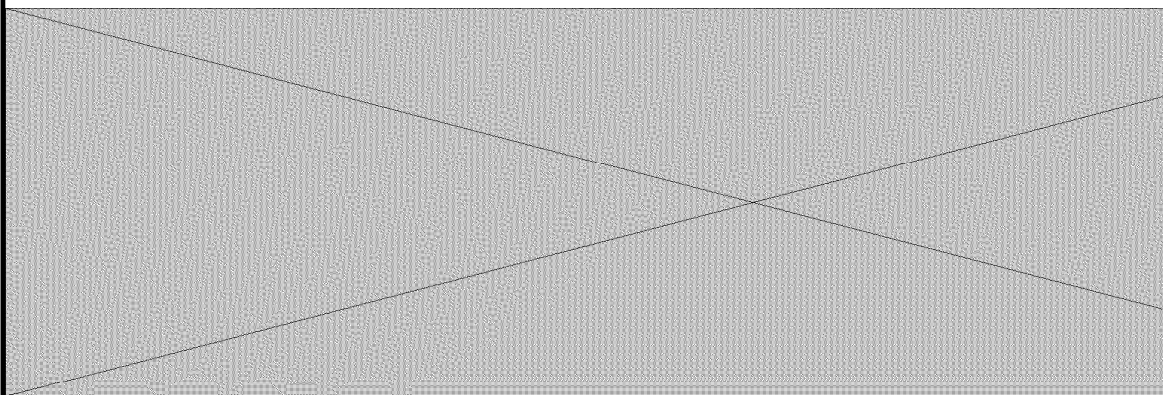
Begin forwarded message:

From: "NCSE Conference" <conference@ncseonline.org>
Date: January 6, 2015 at 12:18:56 PM EST

To: "wolverton.ann@epa.gov" <wolverton.ann@epa.gov>

Subject: **The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference**

Reply-To: conference@ncseonline.org



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www.EnergyEducationSummit.org



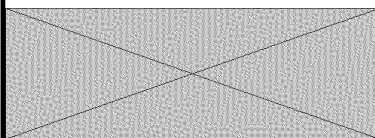
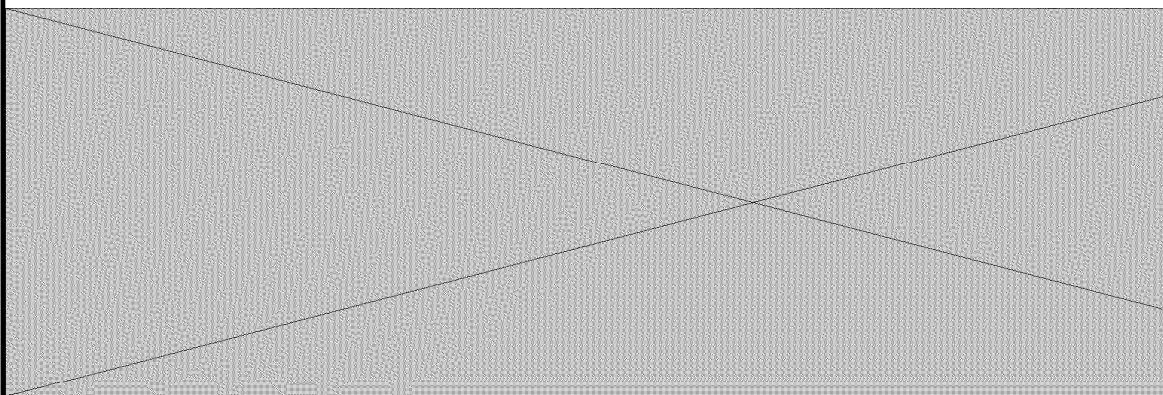
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Education Summit, and CCAP

To: "wolverton.ann@epa.gov" <wolverton.ann@epa.gov>

Subject: **The Social Cost of Carbon, Utilities in 2050, and More: See what's popular at the Energy & Climate Change Conference**

Reply-To: conference@ncseonline.org



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and CEDD Winter Meetings

Over thirty organizations are partnering with the *Energy and Climate Change* conference to engage participants in new and ongoing initiatives that advance solutions to climate change. The initiatives highlighted below are particularly excellent opportunities where participants like you can engage during the conference and beyond.

The Social Cost of Carbon

Session organized by

Karl Hausker, World Resources Institute

This panel will discuss the various steps in calculating the social cost of carbon (SCC), the weaknesses and strengths of those calculations, and how they are used to inform climate policy.

Discussants:

- Francisco de la Chesnaye, EPRI
- Laurie Johnson, Natural Resources Defense Council
- Benjamin Zycher, American Enterprise Institute

Earth Observations Informing Energy Management Decision Making

Session organized by

Richard Eckman, NASA
Ana Pinheiro Privette, Climate Data Solutions

This workshop seeks to enhance the dialogue between Earth science data producers who develop products and those who create the decision support systems that use these measurements for renewable and other energy applications.

Discussants:

- Greg Leng, Natural Resources Canada
- Paul Stackhouse, NASA Langley Research Center
- Scott Sklar, The Stella Group
- Marc Imhoff, University of Maryland
- Erica Zell, Battelle

Wood: The Real Green Building Material

Session organized by

Carl F. Lucero, US Forest Service

The sustainable use of wood helps to restore working lands, mitigate climate change, revitalize communities and support jobs and local economies.

Discussants:

- Mike Ritter, Forest Products Lab, US Forest Service
- William "Bill" Hohenstein, Global Climate Change Program Office, USDA
- Emilee Blount, Technology and Geospatial

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- Services, US Forest Service
- Kenneth Bland, American Wood Council

Carbon Capture and Storage: The Future of Coal

Session organized by

Julio Friedmann,
Department of
Energy

This symposium will explore how to reduce greenhouse gas emissions from the source of 29% of the world's energy supply.

Discussants:

- Brian Anderson, West Virginia University
- James Wood, U.S - China Clean Research Center, West Virginia University
- Sarah Forbes, World Resources Institute
- Robert Finley, Illinois State Geological Survey

EPA's Clean Power Plan 2: Opportunities and Obstacles

Session organized by

Cheryl Roberto,
Environmental
Defense Fund
Mica Odom,
Environmental
Defense Fund

The new Clean Power Plan will provide regulatory certainty to power companies that are making medium- and long-term investment decisions with enormous environmental and economic implications for our future.

Discussants:

- Sue Tierney, Analysis Group
- Jonas Monast, Nicholas Institute for Environmental Policy Solutions, Duke University
- Tom Peterson, Center for Climate Strategies
- Bryan Garcia, Clean Energy Finance and Investment Authority, Connecticut

Geothermal Energy

Session organized by

Paul Young, US
Geological Survey

This symposium will explore the current state of geothermal energy production and opportunities for the future.

Discussants:

- Jonathan Glen, US Geological Survey
- Karl Gawell, Geothermal Energy Association
- Doug Hollett, Geothermal Technologies Office, Department of Energy
- Chris Bromley, GNS Science, New Zealand

Utilities in 2050: Which Possible Futures are Likely and Desirable?

Session organized by

Paul Fikkema,
Northern Arizona
University
Ian Rinehart,
OPower
Bruce Beihoff,
Midwest Energy
Research
Consortium
Gary Radloff,
University of
Wisconsin-
Madison

As distributed generation capacity grows in the U.S., policy should guide, rather than react to, the disruptive changes that distributed generation will bring.

Discussants:

- Amory Lovins, Rocky Mountain Institute
- Richard Caperton, OPower
- Karlynn Cory, National Renewable Energy Laboratory
- Lorenzo Kristov, California Independent System Operator

- Services, US Forest Service
- Kenneth Bland, American Wood Council

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To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Tue 7/14/2015 11:55:11 AM
Subject: RE: RTC 4 111 b

Great, I'll reach out to Steve and see if we can talk this morning.

From: Marten, Alex
Sent: Monday, July 13, 2015 10:56 PM
To: Shouse, Kate
Subject: Re: RTC 4 111 b

I agree.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

On Jul 13, 2015, at 8:49 PM, Shouse, Kate <Shouse.Kate@epa.gov> wrote:

Ex 5

RIA didn't go tonight so perhaps time to resolve before it goes tomorrow.

Thx

Kate

Sent from my iPhone

Begin forwarded message:

From: "Silverman, Steven" <silverman.steven@epa.gov>
Date: July 13, 2015 at 6:47:06 PM EDT
To: "Shouse, Kate" <Shouse.Kate@epa.gov>, "Sarofim, Marcus" <Sarofim.Marcus@epa.gov>, "Jordan, Scott" <Jordan.Scott@epa.gov>
Cc: "Hoffman, Howard" <hoffman.howard@epa.gov>
Subject: RTC 4 111 b

I have added some edits to sharepoint version, and put in a few responses where I was able to.

Non-Responsive

Ex 5

To: Evans, DavidA[Evans.DavidA@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
Cc: Stenhouse, Jeb[Stenhouse.Jeb@epa.gov]
From: Adamantiades, Mikhail
Sent: Thur 6/25/2015 6:41:13 PM
Subject: FW: Request -- in prep for OMB briefing tomorrow
Analysis of the CPP for OMB 6-26-15.pptx

From: Adamantiades, Mikhail
Sent: Thursday, June 25, 2015 2:41 PM
To: Vasu, Amy
Cc: Harvey, Reid; Culligan, Kevin; Weatherhead, Darryl; Stenhouse, Jeb
Subject: RE: Request -- in prep for OMB briefing tomorrow

Here it is, everyone has signed off so this is the version we will be using.

From: Vasu, Amy
Sent: Thursday, June 25, 2015 12:31 PM
To: Adamantiades, Mikhail
Cc: Harvey, Reid; Culligan, Kevin; Weatherhead, Darryl; Stenhouse, Jeb
Subject: Request -- in prep for OMB briefing tomorrow

Hi, Misha,

Will you please send Kevin, Darryl, and me your presentation when you have a draft ready so that Kevin and Darryl and her group can review the materials?

Later today, once everyone has completed review and the materials have been approved, will you please send them to me to send to OMB?

Thank you.

Amy

~~~~~

*Amy B. Vasu*

*U.S. EPA / OAQPS*

*Sector Policies and Programs Division*

*email: [vasu.amy@epa.gov](mailto:vasu.amy@epa.gov)*

*phone: 919.541.0107*



**To:** Culligan, Kevin[Culligan.Kevin@epa.gov]; Harvey, Reid[Harvey.Reid@epa.gov]; Stenhouse, Jeb[Stenhouse.Jeb@epa.gov]; Adamantiades, Mikhail[Adamantiades.Mikhail@epa.gov]; Zenick, Elliott[Zenick.Elliott@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Roberts, Martha[Roberts.Martha@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Elman, Barry[Elman.Barry@epa.gov]; Boswell, Colin[Boswell.Colin@epa.gov]; Weatherhead, Darryl[Weatherhead.Darryl@epa.gov]; Keaveny, Brian[Keaveny.Brian@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]  
**Cc:** Tsirigotis, Peter[Tsirigotis.Peter@epa.gov]; Hoffman, Howard[hoffman.howard@epa.gov]; King, Melanie[King.Melanie@epa.gov]; Lamson, Amy[Lamson.Amy@epa.gov]; CurryBrown, Amanda[CurryBrown.amanda@epa.gov]  
**From:** Vasu, Amy  
**Sent:** Thur 6/25/2015 10:05:18 PM  
**Subject:** Materials for 10am briefing for OMB on analyses  
Analysis of the CPP for OMB 6-26-15 v2.pptx

All,

Here are the materials that Misha will be presenting.

The call-in# is: **Conference code**

**Conference code**

Thank you.

Amy

~~~~~

Amy B. Vasu

U.S. EPA / OAQPS

Sector Policies and Programs Division

email: vasu.amy@epa.gov

phone: 919.541.0107

To: Marten, Alex[Marten.Alex@epa.gov]
Cc: Evans, DavidA[Evans.DavidA@epa.gov]
From: Bryson, Joe
Sent: Thur 6/25/2015 12:51:38 PM
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

From: Marten, Alex
Sent: Thursday, June 25, 2015 5:09 AM
To: Bryson, Joe
Cc: Evans, DavidA
Subject: Re: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Thanks Joe.

Non-Responsive

Non-Responsive

Non-Responsive

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

On Jun 24, 2015, at 5:19 PM, Bryson, Joe <Bryson.Joe@epa.gov> wrote:

Non-Responsive

This study is being pushed in a major way for broad implications for EE generally that are over the top. U of Chicago press release title (below) for example.

To be continued.

From: Vicki Ekstrom High <vekstrom@uchicago.edu>
Subject: Media Release: Study Finds Costs of Residential Energy Efficiency Investments are Double the Benefits
Date: June 23, 2015 3:07:32 PM CDT

To: <gregory.k.busch@gmail.com>

Reply-To: Vicki Ekstrom High <vekstrom@uchicago.edu>

FOR IMMEDIATE RELEASE

June 23, 2015

Contact: Vicki Ekstrom High

Energy Policy Institute at Chicago

vekstrom@uchicago.edu

Study Finds Costs of Residential Energy Efficiency Investments are Double the Benefits
New evidence supports the need for additional policy solutions to confront climate change while more field evidence is gathered to identify the most beneficial energy efficiency investments.

Chicago, Ill. - Energy efficiency investments are widely popular because they are believed to deliver a double win: saving consumers money by reducing the amount of energy they use, while cutting climate-forcing greenhouse gas emissions and other pollutants harmful to human health. But a new study by a team of economists finds residential energy efficiency investments may not deliver on all that they promise. Through a randomized controlled trial of more than 30,000 households in Michigan - where one-quarter of the households were encouraged to make residential energy efficiency investments and received assistance - the economists find that the costs to deploy the efficiency upgrades were about double the energy savings.

"Energy efficiency investments hold great potential as a means to fight climate change.

However, we found that, at least in the case of residential energy efficiency investments, the projected savings overestimate the reality on the ground," says Michael Greenstone, the Milton Friedman professor of economics and director of the Energy Policy Institute at the University of Chicago (EPIC). "A problem as urgent as climate change must be addressed using policies that deliver the greatest bang for their buck. As policymakers design climate policies, these findings suggest that a market-based approach that puts a price on carbon would likely be more effective. In the meantime, it is critical that we field test energy efficiency programs to determine which investments offer the greatest potential."

The study - a part of The E2e Project and led by Greenstone, as well as Meredith Fowlie and Catherine Wolfram of UC Berkeley - assessed the nation's largest residential energy efficiency program, the Federal Weatherization Assistance Program (WAP). Participating low-income households were provided with about \$5,000 worth of weatherization upgrades (e.g. furnace replacement, attic and wall insulation, and weather stripping) per home at zero out-of-pocket costs. While the researchers found that the upgrades did reduce the households' energy consumption by about 10 to 20 percent each month that only translated into \$2,400 in savings over the lifetime of the upgrades - half of what was originally spent to make the upgrades, and less than half of projected energy savings.

. Read a summary of the study.

"Energy efficiency programs are generally viewed as cost effective. This view is often based on engineering calculations and associated savings projections," says Fowle, an associate professor of resource economics and Class of 1935 Endowed Chair in Energy at UC Berkeley. "Our data-driven analysis that measures the actual returns on energy efficiency investments shows how these projections can be quite flawed. In actuality, the energy efficiency investments we evaluated delivered significantly lower savings than the models predict."

Past studies have claimed that energy efficiency investments don't deliver the expected energy savings because of a 'rebound effect': households adjust their behaviors and consume more energy services than they had before the investments were made. However, the economists could find no evidence of this 'rebound effect' in the households they studied.

Further, some say that the broader societal benefits - savings as a result of reductions in pollution from energy production- justify the investments. Again, the findings did not support this. The cost per ton of CO₂ avoided in the sample amounted to \$329, significantly larger than the \$38 per ton that the federal government estimates as the social cost of carbon.

Another claim is that energy efficiency programs have a low take-up rate because consumers don't know about the programs or how to participate, driving down the expected benefits. To investigate this, the authors studied whether extensive outreach and assistance would boost the take-up rate of the program. Using a firm with extensive experience in managing outreach campaigns, the research team made almost 7,000 home visits, more than 32,000 phone calls, and 2,700 follow-up appointments. Yet, despite this aggressive outreach and personal assistance, only 6 percent of households in the treatment group participated in the program, compared to 1 percent in the control group. In the end, it cost more than \$1,000 for each additional household encouraged to undertake these free energy efficiency investments.

"At the end of the day, the models don't capture some of the hard-to-quantify costs involved in making energy efficient choices, which could help explain why people aren't taking advantage of the opportunities as much as the models predict," says Wolfram, the Cora Jane Flood professor of business administration at UC Berkeley's Haas School of Business and faculty director at the Energy Institute at Haas. "This is another reason why potential energy efficiency investments need to be rigorously tested in real-world conditions before relying too heavily on them to solve climate change."

This research was made possible thanks to generous support from the Alfred P. Sloan Foundation, the MacArthur Foundation, the Rockefeller Foundation, and the UC Berkeley Energy and Climate Institute.

[Read a summary of the study here.](#)

[Read the full study here.](#)

To receive updates on energy efficiency research from The E2e Project, click [here](#).

About the Energy Policy Institute at Chicago (EPIC)

Energy powers our modern world, fueling innovation and improving living standards across the globe. But delivering access to reliable and affordable energy, while limiting its social, environmental and climate impacts, is one of society's greatest and most complex challenges. The Energy Policy Institute at the University of Chicago (EPIC) is contributing solutions using a unique, interdisciplinary approach that translates cutting-edge research into real-world impacts through strategic outreach, and training for the next generation of global energy leaders. EPIC collaborates with the Center for Energy and Environmental Policy Research at MIT and the Energy Institute at UC Berkeley's Haas School of Business, through The E2e Project, on research that aims to uncover the causes and consequences of energy efficiency investments. <http://epic.uchicago.edu>

###

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-----Original Message-----

From: Marten, Alex

Sent: Wednesday, June 24, 2015 2:23 PM

To: Bryson, Joe

Cc: Evans, DavidA

Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Repository

Certainly, I would be interested to hear what you think. We are likely to hear more about

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe
Sent: Wednesday, June 24, 2015 11:34 AM
To: Marten, Alex
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

If you want to discuss this paper further, at some point, let us know. We're taking a look.

Non-Responsive

-----Original Message-----

From: Marten, Alex
Sent: Wednesday, June 24, 2015 11:26 AM
To: Bryson, Joe
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

It's an interesting paper, certainly has important implications for using EE programs to deal with distributional/equity issues.

Fair point. Next time I talk to Meredith or Michael I will admonish the misuse of the English language :)

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe
Sent: Wednesday, June 24, 2015 8:25 AM
To: Marten, Alex; Evans, DavidA

Subject: FW: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Suspect you've see reference to this paper that's making the news.

BTW - These economists use "energy savings" all throughout this paper.

-----Original Message-----

From: Joseph Bryson [Personal cell/email]

Sent: Wednesday, June 24, 2015 3:00 AM

To: Joe Bryson; Bryson, Joe

Subject: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

<http://econresearch.uchicago.edu/content/do-energy-efficiency-investments-deliver-evidence-weatherization-assistance-program>

Sent from my iPad

To: Marten, Alex[Marten.Alex@epa.gov]
Cc: Evans, DavidA[Evans.DavidA@epa.gov]
From: Bryson, Joe
Sent: Wed 6/24/2015 9:19:22 PM
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Non-Responsive

To be continued.

From: Vicki Ekstrom High <vekstrom@uchicago.edu>
Subject: Media Release: Study Finds Costs of Residential Energy Efficiency Investments are Double the Benefits
Date: June 23, 2015 3:07:32 PM CDT
To: <gregory.k.busch@gmail.com>
Reply-To: Vicki Ekstrom High <vekstrom@uchicago.edu>

FOR IMMEDIATE RELEASE

June 23, 2015

Contact: Vicki Ekstrom High
Energy Policy Institute at Chicago
vekstrom@uchicago.edu

Study Finds Costs of Residential Energy Efficiency Investments are Double the Benefits

New evidence supports the need for additional policy solutions to confront climate change while more field evidence is gathered to identify the most beneficial energy efficiency investments.

Chicago, Ill. - Energy efficiency investments are widely popular because they are believed to deliver a double win: saving consumers money by reducing the amount of energy they use, while cutting climate-forcing greenhouse gas emissions and other pollutants harmful to human health. But a new study by a team of economists finds residential energy efficiency investments may not deliver on all that they promise. Through a randomized controlled trial of more than 30,000 households in Michigan – where one-quarter of the households were encouraged to make residential energy efficiency investments and received assistance – the economists find that the costs to deploy the efficiency upgrades were about double the energy savings.

“Energy efficiency investments hold great potential as a means to fight climate change. However, we found that, at least in the case of residential energy efficiency investments, the projected savings overestimate the reality on the ground,” says Michael Greenstone, the Milton Friedman professor of economics and director of the Energy Policy Institute at the University of Chicago (EPIC). “A problem as urgent as climate change must be addressed using policies that deliver the greatest bang for their buck.

As policymakers design climate policies, these findings suggest that a market-based approach that puts a price on carbon would likely be more effective. In the meantime, it is critical that we field test energy efficiency programs to determine which investments offer the greatest potential.”

The study – a part of The E2e Project and led by Greenstone, as well as Meredith Fowlie and Catherine Wolfram of UC Berkeley – assessed the nation’s largest residential energy efficiency program, the Federal Weatherization Assistance Program (WAP). Participating low-income households were provided with about \$5,000 worth of weatherization upgrades (e.g. furnace replacement, attic and wall insulation, and weather stripping) per home at zero out-of-pocket costs. While the researchers found that the upgrades did reduce the households’ energy consumption by about 10 to 20 percent each month that only translated into \$2,400 in savings over the lifetime of the upgrades – half of what was originally spent to make the upgrades, and less than half of projected energy savings.

- [Read a summary of the study.](#)

“Energy efficiency programs are generally viewed as cost effective. This view is often based on engineering calculations and associated savings projections,” says Fowlie, an associate professor of resource economics and Class of 1935 Endowed Chair in Energy at UC Berkeley. “Our data-driven analysis that measures the actual returns on energy efficiency investments shows how these projections can be quite flawed. In actuality, the energy efficiency investments we evaluated delivered significantly lower savings than the models predict.”

Past studies have claimed that energy efficiency investments don’t deliver the expected energy savings because of a ‘rebound effect’: households adjust their behaviors and consume more energy services than they had before the investments were made. However, the economists could find no evidence of this ‘rebound effect’ in the households they studied.

Further, some say that the broader societal benefits – savings as a result of reductions in pollution from energy production– justify the investments. Again, the findings did not support this. The cost per ton of CO2 avoided in the sample amounted to \$329, significantly larger than the \$38 per ton that the federal government estimates as the social cost of carbon.

Another claim is that energy efficiency programs have a low take-up rate because consumers don’t know about the programs or how to participate, driving down the expected benefits. To investigate this, the authors studied whether extensive outreach and assistance would boost the take-up rate of the program. Using a firm with extensive experience in managing outreach campaigns, the research team made almost 7,000 home visits, more than 32,000 phone calls, and 2,700 follow-up appointments. Yet, despite this aggressive outreach and personal assistance, only 6 percent of households in the treatment group participated in the program, compared to 1 percent in the control group. In the end, it cost more than \$1,000 for each additional household encouraged to undertake these free energy efficiency investments.

“At the end of the day, the models don’t capture some of the hard-to-quantify costs involved in making energy efficient choices, which could help explain why people aren’t taking advantage of the opportunities as much as the models predict,” says Wolfram, the Cora Jane Flood professor of business administration at UC Berkeley’s Haas School of Business and faculty director at the Energy Institute at Haas. “This is another reason why potential energy efficiency investments need to be rigorously tested in real-world conditions before relying too heavily on them to solve climate change.”

This research was made possible thanks to generous support from the Alfred P. Sloan Foundation, the MacArthur Foundation, the Rockefeller Foundation, and the UC Berkeley Energy and Climate Institute.

[Read a summary of the study here.](#)

[Read the full study here.](#)

To receive updates on energy efficiency research from The E2e Project, [click here.](#)

About the Energy Policy Institute at Chicago (EPIC)

Energy powers our modern world, fueling innovation and improving living standards across the globe. But delivering access to reliable and affordable energy, while limiting its social, environmental and climate impacts, is one of society's greatest and most complex challenges. The Energy Policy Institute at the University of Chicago (EPIC) is contributing solutions using a unique, interdisciplinary approach that translates cutting-edge research into real-world impacts through strategic outreach, and training for the next generation of global energy leaders. EPIC collaborates with the Center for Energy and Environmental Policy Research at MIT and the Energy Institute at UC Berkeley's Haas School of Business, through The E2e Project, on research that aims to uncover the causes and consequences of energy efficiency investments. <http://epic.uchicago.edu>
###

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Chicago, IL 60637

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-----Original Message-----

From: Marten, Alex
Sent: Wednesday, June 24, 2015 2:23 PM
To: Bryson, Joe
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Repository

Certainly, I would be interested to hear what you think. We are likely to hear more about RCTs so it would be good to know why you think there results aren't generalizable. I haven't read this version, but when I read an earlier working draft I put this in the camp of mounting evidence against the viability of ex ante engineering assessments of performance. Didn't see why it would only be applicable to low income programs.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe
Sent: Wednesday, June 24, 2015 11:34 AM
To: Marten, Alex

Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

If you want to discuss this paper further, at some point, let us know. We're taking a look.
In short - it seems to be suggesting a relevance to broader EE EM&V (beyond low income) that is not supported/warranted.

-----Original Message-----

From: Marten, Alex
Sent: Wednesday, June 24, 2015 11:26 AM
To: Bryson, Joe
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

It's an interesting paper, certainly has important implications for using EE programs to deal with distributional/equity issues.

Fair point. Next time I talk to Meredith or Michael I will admonish the misuse of the English language :)

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe
Sent: Wednesday, June 24, 2015 8:25 AM
To: Marten, Alex; Evans, DavidA
Subject: FW: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Suspect you've see reference to this paper that's making the news.

BTW - These economists use "energy savings" all throughout this paper.

-----Original Message-----

From: Joseph Bryson [Personal cell/email]
Sent: Wednesday, June 24, 2015 3:00 AM
To: Joe Bryson; Bryson, Joe
Subject: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

<http://econresearch.uchicago.edu/content/do-energy-efficiency-investments-deliver-evidence-weatherization-assistance-program>

Sent from my iPad

To: Marten, Alex[Marten.Alex@epa.gov]
From: Evans, DavidA
Sent: Mon 6/22/2015 2:58:27 AM
Subject: My start at major comments
15 06 21 draft major comments on 15 06 19 d ria.docx

Non-Responsive

To: Marten, Alex[Marten.Alex@epa.gov]
From: onbehalfof+editor+climatepolicyjournal.org@manuscriptcentral.com
Sent: Sat 6/6/2015 5:03:17 AM
Subject: Reminder: Review Due Today - Climate Policy

06-Jun-2015

Dear Dr Marten,

Title: "Using the Social Cost of Carbon to Value Earth Observing Systems"
Manuscript ID: 15CP1147-RA

Thank you for agreeing to review the above manuscript. This e-mail is a reminder that your review is now due.

To access just the manuscript for review directly with no need to enter log in details, click the link below:

https://mc.manuscriptcentral.com/cpol?URL_MASK=a279e6f4f239469aa0e434743e3e84ef.

Alternatively, to login to your account on the Climate Policy website at
<https://mc.manuscriptcentral.com/cpol>, your case-sensitive USER ID is

Ex 6 - Other

For security purposes your password is not listed in this email. If you are unsure of your password you may click the link below to set a new password.

https://mc.manuscriptcentral.com/cpol?URL_MASK=e991b2223bc34058828aaf483b2b1f17

We look forward to receiving and reading your comments.

With thanks in advance,

Dr Joanna Depledge

Climate Policy Editorial Office
editor@climatepolicyjournal.org

www.climatepolicy.com
blog: climatestrategies.wordpress.com

To: Marten, Alex[Marten.Alex@epa.gov]
From: onbehalfof+editor+climatepolicyjournal.org@manuscriptcentral.com
Sent: Sat 6/13/2015 6:55:10 AM
Subject: Climate Policy - Manuscript ID 15CP1147-RA

13-Jun-2015

Dear Dr Marten,

Title: "Using the Social Cost of Carbon to Value Earth Observing Systems"
Manuscript ID 15CP1147-RA

Thank you for agreeing to review the above manuscript for Climate Policy.

It so happens that we now have enough responses from invited reviewers to take a decision on this manuscript. Therefore, if you have not yet begun to review the manuscript, please feel free to remove this task from your "to do" list.

However, if you have already read the manuscript and would like to let us know your views, please do send us any comments by email. They will still be very helpful to us as we proceed with the manuscript.

Either way, we hope you will be able to review other manuscripts for Climate Policy in the near future.

With thanks for your help,

Dr Joanna Depledge

Climate Policy Editorial Office
editor@climatepolicyjournal.org

www.climatepolicy.com
blog: climatestrategies.wordpress.com

To: Marten, Alex[Marten.Alex@epa.gov]
From: Aldy, Joseph
Sent: Sun 4/12/2015 8:55:51 PM
Subject: Pricing Climate Risk Mitigation
[Pizer et al Science 2014.pdf](#)
[Aldy Nature Climate Change 2015.pdf](#)

Alex,

I hope you are well. I have recently published a commentary in Nature Climate Change titled “Pricing Climate Risk Mitigation” (see attached). In this commentary, I discuss why adaptation and geoengineering should be considered in the estimation of the social cost of carbon. In particular, I suggest that “adaptation response functions” and “geoengineering response functions” should be incorporated in integrated assessment models focused on generating social cost of carbon estimates. I also describe a research agenda that could inform such an effort. I would welcome any thoughts you may have on this. In the commentary, I also cite the recent Science policy forum article that I co-authored with Billy Pizer and others, which I have attached for your reference.

Best,

Joe

Joseph E. Aldy

Assistant Professor of Public Policy

Harvard Kennedy School

Taubman 382, Mailbox 57

79 JFK Street

Cambridge, MA 02138

V: 617-496-7213

E: joseph_aldy@hks.harvard.edu

I: www.hks.harvard.edu/fs/jaldy/

Faculty Chair, Regulatory Policy Program

Mossavar-Rahmani Center for Business and Government

I: www.hks.harvard.edu/centers/mrcbg/programs/rpp

Visiting Fellow

Resources for the Future

I: <http://www.rff.org/aldy.cfm>

Faculty Research Fellow

National Bureau of Economic Research

I: http://www.nber.org/people/joseph_aldy

Senior Adviser

Center for Strategic and International Studies

I: csis.org/expert/joseph-aldy

To: Marten, Alex[Marten.Alex@epa.gov]
From: Evans, DavidA
Sent: Fri 5/22/2015 7:57:17 PM
Subject: SCC call

Alex asked me at Admin briefing if I knew how SCC call went. You might want to let him know.

To: Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
Cc: Griffiths, Charles[Griffiths.Charles@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]
From: Wolverton, Ann
Sent: Fri 5/22/2015 4:40:17 PM
Subject: RE: RTC call - I can make the call

If you are both able to call in then I'll skip out.

From: Kopits, Elizabeth
Sent: Friday, May 22, 2015 12:27 PM
To: Marten, Alex
Cc: Griffiths, Charles; Wolverton, Ann; Newbold, Steve; McGartland, Al
Subject: Re: RTC call - I can make the call

Same here. Will be calling in for first half at least

Sent from my iPhone

On May 22, 2015, at 10:19 AM, "Marten, Alex" <Marten.Alex@epa.gov> wrote:

I am working from home, but will call in. Everyone should feel welcome to join the call, but nothing presented will come as a surprise.

--

Alex Marten

marten.alex@epa.gov

From: Griffiths, Charles
Sent: Friday, May 22, 2015 9:36 AM
To: Wolverton, Ann; Kopits, Elizabeth; Marten, Alex; Newbold, Steve
Cc: McGartland, Al
Subject: Re: RTC call - I can make the call

Nothing from me.

From: Wolverton, Ann
Sent: Friday, May 22, 2015 9:33 AM
To: Kopits, Elizabeth; Marten, Alex; Newbold, Steve; Griffiths, Charles
Cc: McGartland, Al
Subject: RTC call - I can make the call

I know many folks are out today - I can call into the last minute call scheduled by Josh Linn on the SCC RTC this afternoon, so others don't have to disrupt their plans. Are there any burning questions you would like me to ask? If not, I'll just try to take good notes and write them up after to share with the group.

Ann

To: Marten, Alex[Marten.Alex@epa.gov]
From: Wolverton, Ann
Sent: Mon 5/18/2015 6:49:43 PM
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting. Thanks!

Oh sure – just wanted to bring it up at some point.

From: Marten, Alex
Sent: Monday, May 18, 2015 1:00 PM
To: Wolverton, Ann
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

I would like to do this (and the brownbag for that matter) but if it could slip to the next climate team meeting I would really appreciate that.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Wolverton, Ann
Sent: Monday, May 18, 2015 12:55 PM
To: Marten, Alex
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

At some point it would be nice to hear a bit about the CGE project with Zekarias. I think others on the team would be interested as well. Perhaps a quick 5 minute taster in the meeting prior to when a brownbag is scheduled?

From: Marten, Alex

To: Marten, Alex[Marten.Alex@epa.gov]
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email: marten.alex@epa.gov

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From: Marten, Alex

Sent: Monday, May 18, 2015 12:50 PM
To: Wolverton, Ann; Kopits, Elizabeth
Cc: Moore, Chris
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

ok

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Wolverton, Ann
Sent: Monday, May 18, 2015 12:49 PM
To: Kopits, Elizabeth
Cc: Moore, Chris; Marten, Alex
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

Thanks!

Alex, can you give an update on the power sector rules as well?

From: Kopits, Elizabeth
Sent: Monday, May 18, 2015 12:07 PM
To: Wolverton, Ann
Cc: Moore, Chris; Marten, Alex
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

Sent: Monday, May 18, 2015 12:50 PM
To: Wolverton, Ann; Kopits, Elizabeth
Cc: Moore, Chris
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

ok

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

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Sent: Monday, May 18, 2015 12:07 PM
To: Wolverton, Ann
Cc: Moore, Chris; Marten, Alex
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

Update on Landfills NSPS/EG

SCC/SCM

From: Wolverton, Ann

Sent: Monday, May 18, 2015 11:41 AM

To: Bowen, Jennifer; Dockins, Chris; Evans, DavidA; Ferris, Ann; Garbaccio, Richard; Griffiths, Charles; Klemick, Heather; Kopits, Elizabeth; Marten, Alex; McGartland, Al; Moore, Chris; Newbold, Steve; Pasurka, Carl; Sargent, Keith; Shadbegian, Ron; Sheriff, Glenn; Simon, Nathalie; Simpson, David; Snyder, Brett

Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

A gentle reminder....

From: Wolverton, Ann

Sent: Friday, May 15, 2015 2:56 PM

To: Bowen, Jennifer; Dockins, Chris; Evans, DavidA; Ferris, Ann; Garbaccio, Richard; Griffiths, Charles; Klemick, Heather; Kopits, Elizabeth; Marten, Alex; McGartland, Al; Moore, Chris; Newbold, Steve; Pasurka, Carl; Sargent, Keith; Shadbegian, Ron; Sheriff, Glenn; Simon, Nathalie; Simpson, David; Snyder, Brett

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Subject: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

To: Marten, Alex[Marten.Alex@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Moore, Chris[Moore.Chris@epa.gov]
From: Wolverton, Ann
Sent: Mon 5/18/2015 4:50:45 PM
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting. Thanks!

Much appreciated – I know how busy you are.

From: Marten, Alex
Sent: Monday, May 18, 2015 12:50 PM
To: Wolverton, Ann; Kopits, Elizabeth
Cc: Moore, Chris
Subject: RE: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

ok

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

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Sent: Monday, May 18, 2015 12:49 PM
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Cc: Moore, Chris; Marten, Alex
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Cc: Moore, Chris; Marten, Alex
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Thanks!

Update on Landfills NSPS/EG

SCC/SCM

From: Wolverton, Ann
Sent: Monday, May 18, 2015 11:41 AM
To: Bowen, Jennifer; Dockins, Chris; Evans, DavidA; Ferris, Ann; Garbaccio, Richard; Griffiths, Charles; Klemick, Heather; Kopits, Elizabeth; Marten, Alex; McGartland, Al; Moore, Chris; Newbold, Steve; Pasurka, Carl; Sargent, Keith; Shadbegian, Ron; Sheriff, Glenn; Simon, Nathalie; Simpson, David; Snyder, Brett
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Subject: please send me agenda items by COB Monday for next Tuesday's team meeting.
Thanks!

To: Marten, Alex[Marten.Alex@epa.gov]
From: Bishop, Heidi
Sent: Wed 5/13/2015 9:04:07 PM
Subject: FW: Social Cost of Carbon Data
removed.txt

Hi Alex,

I hope you're doing well. I have a super quick question about this data: the original Technical Support Document for the SCC calculations was put out in May 2013. It was later revised and re-released in November 2013. There were slight changes in the data and results between the May and November releases. Is the data you sent from the November 2013 release and does it include the updates, or is from the original May 2013 release? Thanks!

Heidi

From: Marten, Alex [<mailto:Marten.Alex@epa.gov>]
Sent: Monday, March 30, 2015 3:07 PM
To: Bishop, Heidi; Barron, Alex; Duke, Rick
Cc: Lueken, Roger; McGartland, Al; Kopits, Elizabeth
Subject: RE: Social Cost of Carbon Data

Hi Heidi,

I have attached the full set of SCC estimates from the simulations underlying the numbers in the 2013 SCC TSD.

Please let me know if you have any questions.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bishop, Heidi [<mailto:Heidi.Bishop@brattle.com>]
Sent: Monday, March 30, 2015 2:30 PM
To: Barron, Alex; Duke, Rick
Cc: Lueken, Roger; Marten, Alex; McGartland, Al; Kopits, Elizabeth
Subject: RE: Social Cost of Carbon Data

Thank you for offering to assist. We are looking for the full SCCs out through time from the three models and appreciate any help you can provide.

Many thanks,

Heidi

HEIDI BISHOP
Senior Policy and Marketing Analyst
The Brattle Group

Direct +1.202.419.3337

Personal cell/email

Main +1.202.955.5050

brattle.com

From: Barron, Alex [<mailto:Barron.Alex@epa.gov>]
Sent: Friday, March 27, 2015 7:18 PM
To: Duke, Rick
Cc: Fox-Penner, Peter; Bishop, Heidi; Lueken, Roger; Marten, Alex; McGartland, Al; Kopits, Elizabeth
Subject: Re: Social Cost of Carbon Data

Adding folks from NCEE who can be in touch next week.

Sent from my iPhone

On Mar 27, 2015, at 7:13 PM, Duke, Rick <EOP_email/phone> wrote:

Alex: can you help? thks

From: Fox-Penner, Peter [<mailto:Peter.Fox-Penner@brattle.com>]

Sent: Friday, March 27, 2015 4:45 PM

To: Duke, Rick

Cc: Bishop, Heidi; Lueken, Roger

Subject: Social Cost of Carbon Data

Hi Rick –

Hope all is well with you.

I know you might not be deeply involved in the SCC, but I wonder if you can introduce me to someone who could steer us to some backup data – namely the full set of SCCs out through time from the three models.

If you are working on this, and/or want to talk about it, would love to. We are working on the Minnesota PUC case that is applying SCC to utilities.

All the best and thanks

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To: Marten, Alex[Marten.Alex@epa.gov]
From: onbehalfof+editor+climatepolicyjournal.org@manuscriptcentral.com
Sent: Wed 5/6/2015 12:06:57 PM
Subject: Manuscript ID 15CP1147-RA now in your Reviewer Centre- Climate Policy

06-May-2015

Dear Dr Marten,

Title: "Using the Social Cost of Carbon to Value Earth Observing Systems"
Manuscript ID: 15CP1147-RA

Thank you very much for agreeing to review this manuscript for Climate Policy. I hope you will be able to complete your review by 05-Jun-2015. If this timeframe is not possible for you, please let me know as soon as possible.

To access just the manuscript for review directly with no need to enter log in details, click the link below:

https://mc.manuscriptcentral.com/cpol?URL_MASK=077d1f8f25cf43658a40244ba5892e47

On the review page, you will see a space for "Comments to Editor" and a space for "Comments to the Author." Please be sure to put your comments to the author in the appropriate space. We have a double-blind process, so please do NOT provide your identity in the "Comments to Author".

Alternatively, to login to your account on Climate Policy site at <https://mc.manuscriptcentral.com/cpol>, your case-sensitive USER ID is **Ex 6 - Other** For security purposes your password is not listed in this email. If you are unsure of your password you may click the link below to set a new password.

https://mc.manuscriptcentral.com/cpol?URL_MASK=c8d48c546d994c7c89d6e57436d2122f

Once you are logged in, the Main Menu will be displayed. Please click on the Reviewer Center, where you will find the manuscript listed under "Awaiting Reviewer Scores." You can click on the manuscript title from this point or you can click on the "View Details" button to begin reviewing the manuscript.

Please note it is essential that you click the "Save" button if you wish to exit the review before you submit it. Otherwise, none of the information that you have entered will be saved in the system. When you have completed your review and are ready to submit it to the Editor, click on "Submit."

All communications regarding this manuscript are privileged. Any conflict of interest, suspicion of duplicate publication, fabrication of data or plagiarism must immediately be reported to me.

Thank you once again for agreeing to review. Your expert comments will be extremely valuable to us as we consider this manuscript for publication.

With best regards,

Dr Joanna Depledge
Climate Policy Editorial Office
editor@climatepolicyjournal.org

www.climatepolicy.com
blog: climatestrategies.wordpress.com

To: Marten, Alex[Marten.Alex@epa.gov]
From: onbehalfof+editor+climatepolicyjournal.org@manuscriptcentral.com
Sent: Wed 5/6/2015 11:31:10 AM
Subject: Climate Policy invitation 15CP1147-RA

06-May-2015

Dear Dr Marten,

"Using the Social Cost of Carbon to Value Earth Observing Systems"
Manuscript ID 15CP1147-RA

The above manuscript has been submitted for publication in Climate Policy (the abstract appears at the end of this email). Given your expertise, the manuscript should be of interest to you. Would you be able to act as an expert reviewer for it? We usually ask our reviewers to submit their comments within a month.

Please let me know as soon as possible if you are able to accept this invitation to review.

If you are unable to review at this time, I would appreciate you recommending alternative expert reviewers.

To reply, just email me, or click on the appropriate link at the bottom of the page to automatically register your reply with our online manuscript submission and review system.

Once you accept my invitation to review this manuscript, you will be notified via e-mail about how to access our online manuscript submission and review system. You will then have access to the manuscript and reviewer instructions in your Reviewer Center.

Thank you very much for your help, which contributes to our high standards - greatly valued by the editors and authors.

With best regards,

Dr Joanna Depledge
Deputy Editor, Climate Policy
editor@climatepolicyjournal.org

Agreed: https://mc.manuscriptcentral.com/cpol?URL_MASK=9c5aff13eaa0447fa399da34b4041ec1

Declined: https://mc.manuscriptcentral.com/cpol?URL_MASK=b30fbcac39774c0a846052a6b08e6d60

Unavailable: https://mc.manuscriptcentral.com/cpol?URL_MASK=aa9f3db857f7496399267066128b665b

MANUSCRIPT DETAILS

TITLE: Using the Social Cost of Carbon to Value Earth Observing Systems

ABSTRACT: The goal of this study is to show how the US Social Cost of Carbon (SCC) methodology can be used in innovative ways to value new Earth Observing Systems (EOS). The purpose is not to debate the assumptions underlying the SCC calculation. This study departs from the strict US SCC methodology, and from previous work, in that net benefits are used instead of only damages to calculate the value of information of the enhanced systems. In other respects the US SCC methodology is followed closely. New information has economic value only if it is used, and value of information calculations therefore posit a decision context. The enhanced systems are designed to give reliable information about climate

sensitivity on accelerated time scales relative to existing systems; therefore, the decision context stipulates that a global reduced emissions path would be deployed upon receiving suitable information on the rate of temperature rise with a suitable level of confidence. The time of a policy switch depends on the unknown state of the world. The path to which we switch depends on what we observe, when we observe it, and the discount rate. We compute the surfeit expected net benefits of learning the actionable information earlier, with the enhanced system, versus learning later with existing systems. Placing the enhanced observing system in a decision context the SCC enables valuing this system as a real option.

To: Ferris, Ann[Ferris.Ann@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]
Cc: Shadbegian, Ron[Shadbegian.Ron@epa.gov]
From: Evans, DavidA
Sent: Tue 5/5/2015 1:20:57 PM
Subject: RE: E&E news: Clean Power Plan protects public health as much as high carbon tax -- paper

Thanks, Ann. We knew the paper was coming, but I honestly didn't know Dallas was a coauthor.

Non-Responsive

d

From: Ferris, Ann
Sent: Monday, May 04, 2015 2:17 PM
To: Evans, DavidA; Marten, Alex
Cc: Shadbegian, Ron
Subject: E&E news: Clean Power Plan protects public health as much as high carbon tax -- paper

Fyi

<http://www.eenews.net/greenwire/2015/05/04/stories/1060017930>

Clean Power Plan protects public health as much as high carbon tax -- paper

Jean Chemnick, E&E reporter

Published: Monday, May 4, 2015

U.S. EPA's Clean Power Plan will protect public health as much as a very stringent carbon tax would, but at less cost to consumers, a paper published today found.

The [paper](#), by researchers at Harvard University and the Washington, D.C., think tank Resources for the Future (RFF), says that a flexible nationwide model roughly approximating EPA's proposal for carbon dioxide from existing power plants would do more to encourage states to implement demand-side

efficiency programs and shutter coal plants than a direct levy on carbon emissions could.

Published in the journal *Nature Climate Change*, the study, which is the first of its kind to undergo peer review, assumes the carbon price would track with the administration's \$43 a ton social cost of carbon estimate.

The scenario studied in the paper that is most like the Clean Power Plan is assumed to result in more demand-side energy efficiency programs and reductions in coal-fired power than the levy. That would cut emissions of not only CO₂ but the sulfur dioxide and nitrogen oxides that contribute to harmful fine particulate matter pollution, its authors found.

A carbon levy might encourage less power use because it would drive electricity rates up more sharply, but it would also do more to incentivize a switch to natural gas, the report says. The health benefits would be roughly the same between the two approaches, or even a little better under the flexible plan.

Dallas Burtraw, a senior fellow at RFF and co-author of the study, said it shows that the EPA rule would have immediate benefits -- especially for residents of states that historically drew most of their power from coal-fired generation. While the study found that all 48 states in the continental United States would see health benefits from the flexible reduction approach, the biggest winners would be coal-heavy states in the Ohio River Valley like Pennsylvania and Ohio.

"The narrative is that the benefits of climate policy accrue in a geographically disbursed way and in the distant future, but this work shows that combating climate change produces benefits in the present and close to home that are substantial," Burtraw said.

The Harvard paper models three policy scenarios that were constructed before EPA released the Clean Power Plan draft last June. Supplied by the Bipartisan Policy Center and the Natural Resources Defense Council, the scenarios were intended to mimic what experts believed EPA could do to control CO₂ using Section 111(d) of the Clean Air Act.

The paper found that had EPA promulgated a set of modest heat-rate improvement requirements at individual power plants -- as many in industry urged it to do -- that would have done less to safeguard public health than if EPA had done nothing at all to limit carbon.

While tinkering with heat rates would reduce CO₂ by a little more than 2.2 percent after 2020, the paper found that it would actually boost SO₂ emissions by 3 percent because retrofitted coal plants would run more often than under a business-as-usual approach. Coal use would rebound under that scenario, resulting in 10 extra deaths in the United States each year compared with a business-as-usual approach, the paper said.

Industry lawyers have argued that an "inside the fence line" approach to CO₂ reduction would be more likely to withstand legal challenge than the current Clean Power Plan proposal. But while agency staff members have said this summer's final rule will include changes, they have left little doubt that it will maintain a systemwide approach.

The proposed rule would reduce power-sector emissions by 30 percent below 2005 levels by 2030 by requiring states to meet targets that demand more extensive changes to the grid. The paper's second scenario tracks most closely with that approach, allowing averaging across a state and between states and assuming that many states will reach for demand-side efficiency to satisfy a substantial portion of their required reductions.

With less energy being consumed and less of it coming from coal, the paper's "scenario 2" would cut CO₂ by more than 23 percent compared with the reference case but would do even more to limit emissions that contribute to hazardous airborne particles known as PM_{2.5} (particles 2.5 micrometers or less in

diameter). SO2 emissions would decrease 27 percent, the paper said.

A carbon tax would result in more CO2 reductions -- nearly 40 percent -- and would do more to encourage the development and use of carbon capture and storage, the paper said. But it would also yield a 27 percent cut in SO2.

While "scenario 2" would prevent 3,500 premature deaths in the United States every year, the paper found, the carbon tax would avoid only 3,200.

Some economists and other advocates have proposed a carbon levy, but few envision it being as high as \$43 a ton. Australia repealed its \$25 a ton levy last year, which was considered by many to be too high.

To: Marten, Alex[Marten.Alex@epa.gov]
From: Wolverton, Ann
Sent: Thur 4/16/2015 8:14:28 PM
Subject: SCC slides
2015 04 15 SCC background briefing.pptx

I am working on populating the slides with notes to myself but if you have any comments, particularly on the new slides, please let me know.

Ann

To: Marten, Alex[Marten.Alex@epa.gov]

From: Bowen, Jennifer

Sent: Tue 4/21/2015 11:53:53 PM

Subject: Re: Bi-Weekly - Conference code

Thanks, and sorry we don't plan better for these meetings.

On Apr 21, 2015, at 7:35 PM, Marten, Alex <Marten.Alex@epa.gov> wrote:

Sure thing.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Bowen, Jennifer

Sent: Tuesday, April 21, 2015 7:35 PM

To: Marten, Alex

Subject: Re: Bi-Weekly - Conference code

Al thought they would be interested in an update, would that be doable?

On Apr 21, 2015, at 6:20 PM, Marten, Alex <Marten.Alex@epa.gov> wrote:

Hi Jenny,

Do you know what about the SCC will be discussed? If I am supposed to have anything prepped just let me know.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Tuesday, April 21, 2015 5:24 PM
To: McGartland, Al; Massey, Matt; Nagelhout, Peter; Simpson, David; Jenkins, Robin; Sheriff, Glenn; Rees, Sarah; Wolverton, Ann; Newbold, Steve; Johnson, Ann; Dockins, Chris; Kopits, Elizabeth; Balserak, Paul; Gilbreath, Jan; Cooperstein, Sharon; Cristofaro, Alexander; Walsh, Patrick; Nickerson, William; Schillo, Bruce; Marten, Alex; Evans, DavidA; Morgan, Cynthia; Thundiyil, Karen; Klemick, Heather; Farber, Glenn; Simon, Nathalie
Cc: Snyder, Brett; Miller, Kristen; Maguire, Kelly
Subject: RE: Bi-Weekly - Conference code

Meeting in 4144 West – or feel free to call in per the number above.

Proposed agenda includes updates on:

Non-Responsive

• SCC

Non-Responsive

-----Original Appointment-----

From: McGartland, Al

Sent: Wednesday, June 18, 2014 2:40 PM

To: McGartland, Al; Massey, Matt; Nagelhout, Peter; Simpson, David; Jenkins, Robin; Sheriff, Glenn; Rees, Sarah; Wolverton, Ann; Newbold, Steve; Johnson, Ann; Dockins, Chris; Kopits, Elizabeth; Balserak, Paul; Gilbreath, Jan; Cooperstein, Sharon; Cristofaro, Alexander; Walsh, Patrick; Nickerson, William; Schillo, Bruce; Marten, Alex; Evans, DavidA; Morgan, Cynthia; Thundiyil, Karen; Klemick, Heather; Farber, Glenn; Simon, Nathalie; Bowen, Jennifer

Cc: Snyder, Brett; Miller, Kristen; Maguire, Kelly

Subject: Bi-Weekly - Conference code

When: Wednesday, April 22, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Room 4144 WJC West Building

To: Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Wolverton, Ann
Sent: Mon 4/20/2015 5:28:30 PM
Subject: RE: use of SCC in rules

Thanks!

From: Shouse, Kate
Sent: Thursday, April 16, 2015 3:47 PM
To: Wolverton, Ann
Cc: Marten, Alex
Subject: RE: use of SCC in rules

Hi, Ann. I did a quick update but it's ad-hoc, mostly notes for myself so that I can update once rulemakings are proposed or go final. I'm using the tables that Elizabeth sent to GAO for their SCC report. I've added a few rows for the EPA rulemakings in the pipeline (HD2, O&G, etc) plus a note about potential for DOI to use it. I started digging up some of the DOE ECS rulemakings but have not gone through all of them.

I've attached what I have in case anything in here is useful to you (tables begin after the timeline). I don't have a good way to search for other agencies; I recently found this site listing DOE ECS rules, <http://energy.gov/eere/buildings/recent-federal-register-notices>, but otherwise it's word of mouth or EE News.

Good luck,
Kate

From: Wolverton, Ann
Sent: Thursday, April 16, 2015 3:04 PM
To: Shouse, Kate
Cc: Marten, Alex
Subject: use of SCC in rules

Hi Kate,

Alex mentioned that you may have recently updated the list of rules that have used SCC? If so, I am wondering if I can get a copy today or tomorrow? (I have presentation slides due on Monday and was hoping to include something.)

Thanks,

Ann

To: Marten, Alex[Marten.Alex@epa.gov]
From: Wolverton, Ann
Sent: Fri 4/17/2015 4:24:59 PM
Subject: SCC use question

Hi Alex,

Do you have a fairly recent compilation of where SCC has been used outside of rulemakings? I recall Elizabeth had kept a running list at some point for Congressional inquiries but the version I have is already a couple years old. I was hoping to just add a few examples to my slide notes in case someone asks.

Ann

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Fri 4/17/2015 8:25:02 PM
Subject: RE: SCC Technical Discussion

Good timing. Thanks!

From: Marten, Alex
Sent: Friday, April 17, 2015 4:24 PM
To: Shouse, Kate
Subject: FW: SCC Technical Discussion

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Barron, Alex
Sent: Friday, April 17, 2015 4:21 PM
To: McGartland, Al; Marten, Alex; Fawcett, Allen
Subject: FW: SCC Technical Discussion

-----Original Appointment-----

From: Barron, Alex
Sent: Friday, April 17, 2015 1:24 PM
To: Laity, Jim
Subject: Accepted: SCC Technical Discussion
When: Monday, April 20, 2015 2:30 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Call-in Number TBD

To: Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Wolverton, Ann
Sent: Thur 4/16/2015 7:47:45 PM
Subject: RE: use of SCC in rules

Thanks, Kate!

From: Shouse, Kate
Sent: Thursday, April 16, 2015 3:47 PM
To: Wolverton, Ann
Cc: Marten, Alex
Subject: RE: use of SCC in rules

Hi, Ann. I did a quick update but it's ad-hoc, mostly notes for myself so that I can update once rulemakings are proposed or go final. I'm using the tables that Elizabeth sent to GAO for their SCC report. I've added a few rows for the EPA rulemakings in the pipeline (HD2, O&G, etc) plus a note about potential for DOI to use it. I started digging up some of the DOE ECS rulemakings but have not gone through all of them.

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Good luck,
Kate

From: Wolverton, Ann
Sent: Thursday, April 16, 2015 3:04 PM
To: Shouse, Kate
Cc: Marten, Alex
Subject: use of SCC in rules

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Alex mentioned that you may have recently updated the list of rules that have used SCC? If so, I am wondering if I can get a copy today or tomorrow? (I have presentation slides due on Monday and was hoping to include something.)

Thanks,

Ann

To: Gordon, Jessica M[Gordon.Jessica@epa.gov]; Li, Jia[Li.Jia@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]
Cc: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 4/15/2015 5:27:33 PM
Subject: FW: CLIMATE: BLM crafting guidance on social cost of carbon -- internal memo -- Wednesday, April 15, 2015 -- www.eenews.net

FYI

-----Original Message-----

From: Barron, Alex
Sent: Wednesday, April 15, 2015 1:15 PM
To: Beauvais, Joel; McGartland, Al; Fawcett, Allen; Marten, Alex; Shouse, Kate; Gunning, Paul
Subject: CLIMATE: BLM crafting guidance on social cost of carbon -- internal memo -- Wednesday, April 15, 2015 -- www.eenews.net

<http://www.eenews.net/greenwire/2015/04/15/stories/1060016810>

Sent from my iPhone

To: Marten, Alex[Marten.Alex@epa.gov]
From: Rose, Steven
Sent: Wed 4/15/2015 5:31:06 PM
Subject: RE: Individual SCC results?

Hi Alex,

Thank you!! I was hoping you had something at your fingertips.

Did you catch the cherry blossoms before the rains? I didn't, but at least there are a good number of blooming trees in my neighborhood.

Cheers,

Steve

From: Marten, Alex [mailto:Marten.Alex@epa.gov]
Sent: Wednesday, April 15, 2015 1:18 PM
To: Rose, Steven
Subject: RE: Individual SCC results?

Hi Steve,

No problem. I think the attached is what you're looking for.

And yes, I'm loving the warmer weather.

--

To: Marten, Alex[Marten.Alex@epa.gov]
From: Rose, Steven
Sent: Wed 4/15/2015 5:31:06 PM
Subject: RE: Individual SCC results?

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Cheers,

Steve

From: Marten, Alex [mailto:Marten.Alex@epa.gov]
Sent: Wednesday, April 15, 2015 1:18 PM
To: Rose, Steven
Subject: RE: Individual SCC results?

Hi Steve,

No problem. I think the attached is what you're looking for.

And yes, I'm loving the warmer weather.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Rose, Steven [<mailto:srose@epri.com>]
Sent: Wednesday, April 15, 2015 1:11 PM
To: Marten, Alex
Subject: Individual SCC results?

Hi Alex,

I hope you are well and enjoying the beautiful spring. I'm just writing with a quick SCC question. Do you have, and would it be possible for you to share, the 2013 individual model SCC estimates for each year (i.e., the 50,000 estimates from each model for each year 2010-2050)? I'm trying to better understand the individual models and it would be helpful to see their individual results.

Thanks for whatever you can share.

Best wishes,

Steve

Steven Rose, Ph.D.

Senior Research Economist

Energy and Environmental Analysis Research Group

EPRI (Electric Power Research Institute)

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Rose, Steven [<mailto:srose@epri.com>]
Sent: Wednesday, April 15, 2015 1:11 PM
To: Marten, Alex
Subject: Individual SCC results?

Hi Alex,

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Thanks for whatever you can share.

Best wishes,

Steve

Steven Rose, Ph.D.

Senior Research Economist

Energy and Environmental Analysis Research Group

EPRI (Electric Power Research Institute)

1325 G Street NW

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Washington, DC 20005

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+1 (202) 293-6183

srose@epri.com

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Suite 1080

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+1 (202) 293-6183

srose@epri.com

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 3/18/2015 6:33:37 PM
Subject: FW: SCC and regulation brownbag

FYI – I signed up for the webinar version of this SCC brownbag and I think Jessica Gordon (an attorney in our division) is going in person. Speakers include Kevin Dayaratna (Heritage) and Laurie Johnson (NRDC). The registration is kind of annoying – they charge a fee and the fee varies depending whether you do the webinar or go in-person, requiring you to decide in advance how you'll participate.

From: Gordon, Jessica M
Sent: Monday, March 16, 2015 10:02 AM
To: Irving, Bill; Shouse, Kate; Li, Jia; Fawcett, Allen
Subject: SCC and regulation brownbag

Hi,

I wanted to let you know (if you don't already) about a DC Bar brownbag on using SCC in to justify regulation. It will be 12-1:30 pm on 3/31 at 1101 K St. NW. I'm planning to go; let me know if you'd like to go together. The details and registration are at:

<http://www.eli.org/events/measuring-social-cost-carbon-promise-and-pitfalls-using-scc-justify-regulation>

Jessica

Jessica M. Gordon
Attorney-Advisor, Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9444
gordon.jessica@epa.gov

This message may contain privileged or other confidential information.
Please do not forward or distribute it outside of EPA.

To: Marten, Alex[Marten.Alex@epa.gov]
From: Rowell, Kristen
Sent: Fri 3/13/2015 9:31:22 PM
Subject: RE: Workshop at Society for Benefit Cost Analysis

Muchas gracias!

From: Marten, Alex
Sent: Friday, March 13, 2015 5:29 PM
To: Rowell, Kristen
Subject: FW: Workshop at Society for Benefit Cost Analysis

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Personal cell/email
Sent: Tuesday, February 17, 2015 9:13 AM
To: Marten, Alex; Sarofim, Marcus; Arden Rowell
Subject: Re: Workshop at Society for Benefit Cost Analysis

An overview of climate change, its impacts and the social cost of carbon

Workshop organizer: Elisabeth Gilmore

WORKSHOP DESCRIPTION

The far-reaching implications of climate change ensure that it will remain an important policy issue. This workshop aims to provide participants with an overview of climate change, its impacts, and the development and application of the social cost of carbon (SCC). First, we provide an overview of the science and risks of climate change. Second, we provide an assessment of the climate damages and integrated assessment models (IAMs), which played a critical role in establishing the US government's social

cost of carbon (SCC). Third, we discuss climate policy and the use of SCC in regulatory analysis and the benefit cost analysis. While this workshop will not directly address expectations of future domestic or international climate policy, participants should leave the workshop with an enhanced understanding of the benefits of avoiding climate change, the use of IAMs to develop estimates of these benefits, and the strengths and limitations of the use of SCC. This workshop is structured into three presentations with ample time for discussion following each presentation. The target audience is those who would like an overview or refresher on the basics of climate science, economics and US regulation. It is designed to be accessible to those without a science background.

WORKSHOP AGENDA (subject to change)

1:30 PM – 1:40 PM: Introduction and Overview (Elisabeth Gilmore)

1:40 PM – 2:15 PM: Science of Climate Change and the Climate Damages: A review the basics of Earth science and climate change, the sources, sinks, and atmospheric dynamics of greenhouse gases, the expected damages and risks and the major sources of uncertainty.

2:15 PM – 3:00 PM: Integrated Assessment Models (IAM) and Economic Damages: An introduction to the representation of climate change and the economic damages in integrated assessment models (IAMs) and the role that they played in establishing the US government's social cost of carbon (SCC).

3:00 PM – 3:15 PM: Break (with refreshments)

3:15 PM – 4:30 PM: Social cost of carbon and the regulatory environment in the United States: An overview of use of the SCC for regulatory analysis. Specific attention will be placed on the development of the present regulatory environment under the Clean Air Act.

4:30 PM – 5:00 PM: Participatory Discussion

Sent from Surface Pro

From: Elisabeth Gilmore

Sent: Tuesday, February 17, 2015 8:36 AM

To: Marten, Alex, Marcus Sarofim, Arden Rowell

I'll be on the line at 9 am today. Please join me if you can.

I also recognize that the weather may cause some delays and children are at home. Let me know if you need to reschedule, and we can follow up separately.

Warmly,
Elisabeth

On Thu, Feb 12, 2015, 5:30 PM null **Personal cell/email** wrote:

Wonderful! We will talk at 9 am on Tuesday, Feb 17. The agenda is to review the plans for the workshop and coordinate the presentations. Again, a very big thank you for agreeing to present!

Warmly,
Elisabeth

Dial in:

Conference code

Participa

From: Marten, Alex
Sent: Thursday, February 12, 2015 5:27 PM
To: Marcus Sarofim, Arden Rowell, Elisabeth Gilmore

That works for me as well

--

Alex L. Marten

phone: (202) 566-2301
email: marten.alex@epa.gov

From: Sarofim, Marcus
Sent: Thursday, February 12, 2015 3:32 PM
To: Arden Rowell; Personal cell/email
Cc: Marten, Alex
Subject: RE: Workshop at Society for Benefit Cost Analysis

Tuesday the 17th, 9 am, works for me,

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch

From: Arden Rowell; Personal cell/email
Sent: Thursday, February 12, 2015 3:30 PM
To: Personal cell/email
Cc: Sarofim, Marcus; Marten, Alex
Subject: Re: Workshop at Society for Benefit Cost Analysis

Works for me!

Sent from my iPhone

On Feb 12, 2015, at 1:51 PM, Personal cell/email
Personal cell/email wrote:

Dear Arden, Alex and Marcus,

Ex 6 - Other

We have been given the green light by the SBCA for our workshop. We have six people attending our workshop at the early registration deadline. I anticipate that there are another few more before the registrations deadline. These numbers are consistent with previous enrollments.

Could we try again for a conference call on February 17 at 9 am? Please let me know as soon as possible of your availability.

Warm regards,

Elisabeth

From: Elisabeth Gilmore

Sent: Friday, January 16, 2015 3:38 PM

To: [Marcus Sarofim](#), marten.alex@epa.gov

Personal cell/email

Dear Marcus, Alex and Arden,

Thank you again for agreeing to present at the Society for Benefit Cost Analysis workshop on the social cost of carbon!

I am attaching the workshop description. In addition to the publicity from the Society, I hope that you can help by disseminating the information on this workshop through your professional networks.

We will be informed around the end of January / early February whether we have the go ahead based on our registration numbers. Assuming that we are proceeding, I'd like to schedule a conference call in early February to discuss the goals of the workshop and coordinate the presentations. Please indicate your availability in this doodle poll: <http://doodle.com/we5tuakyrp7qkwqv>.

As always, let me know if you have any questions or concerns.

Warm regards,

Elisabeth

Elisabeth Gilmore

Assistant Professor

School of Public Policy

University of Maryland

College Park, MD

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]; Dockins, Chris[Dockins.Chris@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Garbaccio, Richard[Garbaccio.Richard@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Klemick, Heather[Klemick.Heather@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Pasurka, Carl[Pasurka.Carl@epa.gov]; Sargent, Keith[Sargent.Keith@epa.gov]; Shadbegian, Ron[Shadbegian.Ron@epa.gov]; Sheriff, Glenn[Sheriff.Glenn@epa.gov]; Simon, Nathalie[Simon.Nathalie@epa.gov]; Simpson, David[Simpson.David@epa.gov]; Snyder, Brett[Snyder.Brett@epa.gov]
From: Wolverton, Ann
Sent: Mon 3/23/2015 4:50:17 PM
Subject: draft agenda for today's team meeting

Agenda for Climate and International Team Meeting – March 23, 2015

-

Rule-Related:

Non-Responsive

Other items

Non-Responsive

- NAS social cost of carbon update

Upcoming Seminars of Potential Interest

-

Non-Responsive

To: Marten, Alex[Marten.Alex@epa.gov]
From: Rowell, Arden
Sent: Mon 4/13/2015 10:02:24 PM
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Great, glad it was helpful. If you decide you want to invest in a book, I think http://www.amazon.com/A-Guide-Federal-Agency-Rulemaking/dp/1614385793/ref=dp_ob_title_bk is relatively readable.

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

From: Marten, Alex [Marten.Alex@epa.gov]
Sent: Monday, April 13, 2015 4:58 PM
To: Rowell, Arden
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

This is perfect, thank you so much. I am trying to get a better handle on how these things are argued and what the courts are looking at/for. This is a perfect starting place.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Rowell, Arden [mailto:karowell@illinois.edu]
Sent: Monday, April 13, 2015 5:41 PM
To: Marten, Alex
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex,

Sure thing. Two good cases come to mind, one super-famous (and even an EPA rule), the other a recent one that's been causing a lot of conversation.

To: Marten, Alex[Marten.Alex@epa.gov]
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To: Marten, Alex
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex,

Sure thing. Two good cases come to mind, one super-famous (and even an EPA rule), the other a recent one that's been causing a lot of conversation.

Most famous case rejecting an agency BCA under the APA is probably *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991) (rejecting EPA's rule banning asbestos under TSCA section 6 & remanding to the agency on the grounds that the cost-benefit justification was inadequate) (available at <https://law.resource.org/pub/us/case/reporter/F2/947/947.F2d.1201.89-4596.html>). EPA did a couple of things I'd be surprised to see nowadays (discounted costs but not benefits & had some weird inconsistencies in VSLs), and a few things that could totally happen again (left some benefits unquantified, refused to repeat their analysis with better data supplied by industry). The most relevant section is probably the part discussing "Unreasonable Risk of Injury." One (possibly) important point on this case, though, is that it's not actually under the typical (and easier-to-satisfy) "arbitrary and capricious" review--the court applied a more stringent standard of review because of how they read the underlying statute, and that's the standard that the rule failed. (This may be irrelevant to your current purposes, if all you need is a case that rejects a BCA under the APA, but thought I'd mention it.) A lot of legal commentators think this case went very deep into taking a "hard look" at the agency's rationale...judicial review doesn't generally get deeper than this.

Another much-talked-about more recent case where the rule was rejected on the basis of arbitrary and capricious review (under the APA) is *Business Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011) (vacating as arbitrary and capricious an SEC rule requiring public companies to include information about board nominees in their annual proxy statements, saying that the agency "failed . . . adequately to assess the economic effects of a new rule"), available at <http://www.leagle.com/decision/ln%20FCO%2020110722000T.xml>. Part II is the most relevant section. Basically, the court said that the agency had "inconsistently and opportunistically framed the costs and benefits of the rule; failed adequately to quantify the certain costs or to explain why those costs could not be quantified; neglected to support its predictive judgments; contradicted itself; and failed to respond to substantial problems raised by commenters" (opinion at 1148-49). It's not 100% clear how many of those things had to happen for the rule to be arbitrary and capricious, but all of them together was obviously bad.

Let me know if those work or if you need something newer/different. Or if I ended up not making sense somewhere...typing in a hurry before I run off to a meeting.

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

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University of Illinois College of Law

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http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

From: Marten, Alex [Marten.Alex@epa.gov]

Sent: Monday, April 13, 2015 3:38 PM

To: Rowell, Arden

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Arden,

My turn for question. Do you have any good examples of rules that have been vacated or remanded due to APA issues w/ the BCA? Specifically, ones that weren't associated with the SCC.

Thanks.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Rowell, Arden [<mailto:karowell@illinois.edu>]

Sent: Monday, April 06, 2015 12:49 PM

To: Marten, Alex

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Neat! I'll go look. Thanks Alex!

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

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Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

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http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

From: Marten, Alex [Marten.Alex@epa.gov]

Sent: Monday, April 06, 2015 11:26 AM

To: Rowell, Arden

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

That's an interesting idea. It reminded me that the EU through the PESETA project has done some work w/ tourism, but I'm not sure if they have addressed this issue in there.

<http://peseta.jrc.ec.europa.eu/>

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Rowell, Arden [<mailto:karowell@illinois.edu>]

Sent: Monday, April 06, 2015 12:22 PM

To: Marten, Alex

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Awesome--thanks so much. Particularly interesting re: the "everything else" box in the most recent DICE version. Seems like may be more opportunities to incorporate some sort of "special cultural value" measure as the models get better at determining localized & regional impact. Could look at tourist dollars spent or something. Apparently Mastercard creates a list every year of "most visited cities" http://newsroom.mastercard.com/wp-content/uploads/2014/07/Mastercard_GDCI_2014_Letter_Final_70814.pdf (Bangkok pretty much ties London--who would have thought?). Anyway, thanks again--super helpful!

PS What about Venice! Venice!!

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

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From: Marten, Alex [Marten.Alex@epa.gov]

Sent: Monday, April 06, 2015 11:05 AM

To: Rowell, Arden

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

I think in general that is a safe assumption. But I will note that in earlier version of the DICE model Nordhaus had a human settlements category which he acknowledged was speculative, but this is the type of thing he was trying to capture. In the most recent version of DICE he has a catch all category which he might argue is trying to capture an adjustment for hard to measure things such as this. FUND does not account for this, and I don't recall any of the PAGE literature talking about this issue.

I hope that helps.

P.S. Your example made me smile because the Italians are really big on this point in general (not just wrt the IAMs) and bring it up all the time at international events.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Rowell, Arden [<mailto:karowell@illinois.edu>]

Sent: Monday, April 06, 2015 11:57 AM

To: Marten, Alex

Subject: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex! Hope all's well. Quick question: can you think of any examples within FUND, DICE, or PAGE of valuation of communities, groups, or cultural artifacts rather than individualized damage? So, e.g., suppose that someone thought that the culture of the Laplanders was important separate from individualized harm to individual Laplanders, or that Venice was important for cultural reasons that go beyond harm to Venetians. Anything in any of the IAMs on that? I was thinking there wasn't anything on any of that stuff in any of the models (and I guess there could be double-counting concerns if there were),

http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

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To: Rowell, Arden

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email: marten.alex@epa.gov

From: Rowell, Arden [<mailto:karowell@illinois.edu>]

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To: Marten, Alex

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but figured you'd be the person to know.

All best,

Arden Rowell

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University of Illinois College of Law

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http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

To: Marten, Alex[Marten.Alex@epa.gov]
From: Evans, DavidA
Sent: Tue 4/7/2015 10:38:28 PM
Subject: Follow up on some stuff from Friday...

I started this email Friday, and then has a brain scrambling weekend, and of course the past two days. I suspect I am missing a few items to bring to your attention, but I'll follow up with those when I recall them.

Email on to do list I sent around late Friday:

Non-Responsive

A couple notes on the b presentation, other than those I've already mentioned:

- The deck is essentially, if not exactly, the same as the one provided on the WG meeting yesterday.

Non-Responsive

- I may have a few more points; I've yet to review my notes.

Convo with Alex Mac on Friday:

Non-Responsive

- **Non-Responsive**

Non-Responsive

Non-Responsive

Al's intern-for-a-day

- The guy from Maryland (undergrad) was in our air team meeting. I discussed **Non-Responsive**

Non-Responsive

Non-Responsive

The intern asks a

Ex 5

Ex 5

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Mon 3/30/2015 8:09:16 PM
Subject: RE: SCC brownbag: OAP reserved room for webinar
SCC and regulation (DC Bar webinar)

Sorry, I'll attach the correct one this time. Jessica booked room 4228A in WJCS (walk past my desk towards WJCN).

From: Marten, Alex
Sent: Monday, March 30, 2015 4:07 PM
To: Shouse, Kate
Subject: RE: SCC brownbag: OAP reserved room for webinar

Thanks Kate. What's the room number? It seems to be missing from the invite you sent.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, March 30, 2015 4:03 PM
To: Marten, Alex
Subject: SCC brownbag: OAP reserved room for webinar

In case your plans change tomorrow, you (or anyone else interested) are welcome to join us.
Room details attached.

To: Marten, Alex[Marten.Alex@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Wolverton, Ann[Wolverton.Ann@epa.gov]
From: Moore, Chris
Sent: Wed 3/18/2015 12:40:02 PM
Subject: FW: Questions for a Thesis
[EPA Interview Questions \(1\).pdf](#)
[EPA Interview Questions \(1\).docx](#)

Did any of you get this email too? It's about the interagency SCC process which I haven't been involved with in years. I don't mind answering this kid's questions but it would be good if he got some answers from people who are more involved too.

From: Dominic Watson [Personal cell/email]
Sent: Tuesday, March 17, 2015 3:47 PM
To: Moore, Chris
Subject: Questions for a Thesis

Dear Dr. Moore,

My name is Dominic, I am a student at UPenn writing a thesis on information flow as it affects U.S. Climate Change Policy. I had a chance to speak with Al McGartland earlier today who suggested that I could send you a few research questions in written form.

For your reference I have attached the questions in both word and pdf format. If you have a moment I would greatly appreciate getting your responses. Please let me know if you have any comments or questions concerning the thesis topic.

Thank you very much for taking the time.

Best,

Dominic

--

Dominic Watson
Bachelor of Arts Candidate 2015

College of Arts and Sciences, University of Pennsylvania
+1-617-417-7675 | dowatson@sas.upenn.edu

To: Marten, Alex[Marten.Alex@epa.gov]
From: Bernstein, Paul
Sent: Tue 3/10/2015 8:17:23 PM
Subject: RE: SCC Estimation Information

Hi,

Thank you for these files. Much appreciated.

Take care,

Paul

From: Marten, Alex [mailto:Marten.Alex@epa.gov]
Sent: Tuesday, March 10, 2015 4:14 PM
To: Bernstein, Paul
Subject: SCC Estimation Information

Hi Paul,

Per our phone conversation, attached are the three zip files containing the information for replicating the 2013 updated SCC estimates.

If you have any further questions please let me know.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

This e-mail and any attachments may be confidential or legally privileged. If you received this message in error or are not the intended recipient, you should destroy the e-mail message and any attachments or copies, and you are prohibited from retaining, distributing, disclosing or using any information contained herein. Please inform us of the erroneous delivery by return e-mail. Thank you for your cooperation.

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 2/11/2015 3:08:12 PM
Subject: mtg with Joel

Hi, Alex. I had thought today's meeting with Joel was to prepare for the NAS meeting and update him on yesterday's EOP meeting – is that the case? I don't know Tom Burke, is he someone we'd want to talk to about potential NAS contract? Just want to make sure I understand the meeting topic, thanks!

From: Marten, Alex
Sent: Wednesday, February 11, 2015 9:44 AM
To: Shouse, Kate; Sarofim, Marcus
Subject: RE: SCC RTC Comments

I'll leave that up to you and Marcus. I will probably take it last and I'm completely fine if that means Wednesday night.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Tuesday, February 10, 2015 3:49 PM
To: Marten, Alex; Sarofim, Marcus
Subject: FW: SCC RTC Comments

Just wanted to touch base about when you both think you might be able to review the draft next. Right now either Friday (2/13) or Wednesday (2/18) look best for me but I'm happy to juggle if that doesn't look great for either of you.

Thanks!

Kate

From: Newbold, Steve
Sent: Tuesday, February 10, 2015 3:46 PM
To: Marten, Alex; Griffiths, Charles; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Ok I'll take a look next

From: Marten, Alex
Sent: Tuesday, February 10, 2015 3:24 PM
To: Griffiths, Charles; Newbold, Steve; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

That sounds like a great plan. Thank you!

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Griffiths, Charles
Sent: Tuesday, February 10, 2015 2:37 PM
To: Newbold, Steve; Marten, Alex; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

How about if Steve takes his turn tomorrow and I'll take Thursday.

Charles Griffiths
National Center for Environmental Economics
Room 4334B, WJC West, Mail Code 1809T
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Phone: 202/566-2288 Fax: 202/566-2338
Email: griffiths.charles@epamail.epa.gov

From: Newbold, Steve
Sent: Tuesday, February 10, 2015 2:16 PM
To: Marten, Alex; Li, Jia; Shouse, Kate; Griffiths, Charles; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

I can start working on it tomorrow morning (or possibly this eve if someone else wants to take a quick crack at it first)

From: Marten, Alex
Sent: Tuesday, February 10, 2015 2:13 PM
To: Li, Jia; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Charles, Steve, Marcus, Kate any takers on the pen?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Tuesday, February 10, 2015 1:19 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: Re: SCC RTC Comments

Passing on my comments on top of Ann's for the next reviewer.

Thanks!

Jia

From: Marten, Alex
Sent: Monday, February 9, 2015 6:16 PM
To: Li, Jia; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

OK I think I may have figured it out. Jai try going into:

Options->Trust Center->Trust Center Settings->Privacy Options

And then uncheck the box "Remove personal information from file properties on save"

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Monday, February 09, 2015 5:59 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Alex:

Thanks! I have started the review and can add my comments to the version with Ann's comments next. One quick question: I noticed that the document automatically revert all changes to a generic "author" when saving changes to the document. Do you want us to identify ourselves in case you need to clarify or follow up on individual comments or edits? If so, any suggestion on how to change the option setting to do that? This may not be so important but will just be a little hard to keep track of different people's comments.

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 5:49 PM
To: Shouse, Kate; Li, Jia; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: SCC RTC Comments

Hi All,

I believe this is the correct list of staff who might be interested in reviewing the draft RTC. To avoid having to merge different sets of

comments I am hoping we can stage the review. Ann took a first crack at this today and has added her comments in the attached. I believe Jia has the pen next.

I would like to have the staff review done by next Wednesday (2/18) COB to have time for management review. That gives one work day per person to get through this which should be enough as we are emphasizing, as Jim did on Friday, that this should be approached with a light touch to respect the large time commitment that is already in this version. Please focus on issues related to technical accuracy of the way in which the comments are represented and the response.

Thank you.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: McGartland, Al[McGartland.Al@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]
From: Wolverton, Ann
Sent: Thur 2/12/2015 3:24:37 PM
Subject: RE: anyone want to speak on SCC April 23 in Minnesota?

I checked with Misha and it seems it will work! I am also checking that my friend is around – my expectation is yes since the semester is in full swing.

I have a series of meetings this morning but will call Thad when I return to my desk.

Ann

From: McGartland, Al
Sent: Wednesday, February 11, 2015 4:58 PM
To: Newbold, Steve; Wolverton, Ann; Marten, Alex; Griffiths, Charles
Subject: RE: anyone want to speak on SCC April 23 in Minnesota?

Also Ann, if you want to stay with friend, that is fine, but they pay for 2 nights hotel (and we have travel funds as well.). So its not necessary to reduce costs.

Also, this does not count as any travel to professional conferences, etc. so you are not using up any credits there.

From: Newbold, Steve
Sent: Wednesday, February 11, 2015 6:54 AM
To: Wolverton, Ann; McGartland, Al; Marten, Alex; Griffiths, Charles
Subject: RE: anyone want to speak on SCC April 23 in Minnesota?

Hi Al,

Can you give us more info on this conference? If it is convenient for Ann to go then I am happy to stand down for this one.

Thanks,

Steve Newbold
U.S. EPA
National Center for Environmental Economics (NCEE)
EPA West, 4316T, MC 1809T
1200 Pennsylvania Ave NW
Washington, DC 20004
(202) 566-2293

From: Wolverton, Ann
Sent: Monday, February 09, 2015 10:41 AM
To: McGartland, Al; Newbold, Steve; Marten, Alex; Griffiths, Charles
Subject: RE: anyone want to speak on SCC April 23 in Minnesota?

I may be interested, depending on where it is. I have friends in St. Paul that I could stay with.

Ann

From: McGartland, Al
Sent: Friday, February 06, 2015 5:11 PM
To: Newbold, Steve; Marten, Alex; Griffiths, Charles; Wolverton, Ann
Subject: anyone want to speak on SCC April 23 in Minnesota?

I think the talk is to at a law conference. I will know more early next week.

To: Marten, Alex[Marten.Alex@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]
Cc: Wolverton, Ann[Wolverton.Ann@epa.gov]
From: Li, Jia
Sent: Mon 2/9/2015 11:25:30 PM
Subject: RE: SCC RTC Comments

It works! Thanks!

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 6:17 PM
To: Li, Jia; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

OK I think I may have figured it out. Jai try going into:

Options->Trust Center->Trust Center Settings->Privacy Options

And then uncheck the box "Remove personal information from file properties on save"

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia

Sent: Monday, February 09, 2015 5:59 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Alex:

Thanks! I have started the review and can add my comments to the version with Ann's comments next. One quick question: I noticed that the document automatically revert all changes to a generic "author" when saving changes to the document. Do you want us to identify ourselves in case you need to clarify or follow up on individual comments or edits? If so, any suggestion on how to change the option setting to do that? This may not be so important but will just be a little hard to keep track of different people's comments.

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 5:49 PM
To: Shouse, Kate; Li, Jia; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: SCC RTC Comments

Hi All,

I believe this is the correct list of staff who might be interested in reviewing the draft RTC. To avoid having to merge different sets of comments I am hoping we can stage the review. Ann took a first crack at this today and has added her comments in the attached. I believe Jia has the pen next.

I would like to have the staff review done by next Wednesday (2/18) COB to have time for management review. That gives one work day per

person to get through this which should be enough as we are emphasizing, as Jim did on Friday, that this should be approached with a light touch to respect the large time commitment that is already in this version. Please focus on issues related to technical accuracy of the way in which the comments are represented and the response.

Thank you.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Marten, Alex[Marten.Alex@epa.gov]
From: Alex Marten
Sent: Mon 2/9/2015 8:31:38 PM
Subject: Fwd: SCC RTC- Ann's comments for sections 4 - end
2015 02 07 SCC RTC Clean for Interagency Review_aw.docx

----- Forwarded message -----

From: **Wolverton, Ann** <Wolverton.Ann@epa.gov>
Date: Mon, Feb 9, 2015 at 1:20 PM
Subject: SCC RTC- Ann's comments for sections 4 - end
To: "Alex Marten" Personal cell/email

Hi Alex,

As I mentioned, I started with section 4 since I had already previously provided you with comments on the document through section 3. I tried to offer red-line as well as a reason for my change/insertion so let me know if something seems problematic. I am happy to discuss further.

Ann

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Mon 2/9/2015 7:34:38 PM
Subject: Re: SCC NAS Comms material

Will do.

Sent from my iPhone

On Feb 9, 2015, at 2:33 PM, "Marten, Alex" <Marten.Alex@epa.gov> wrote:

Hi Kate,

Attached is an updated version of the NAS SCC comms materials based on input from Alex. Would you mind taking a quick look before I send them over to EOP?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

<2015 02 09 SCC NAS comms materials v2.docx>

To: McGartland, Al[McGartland.Al@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Marten, Alex[Marten.Alex@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]
From: Wolverton, Ann
Sent: Mon 2/9/2015 3:41:16 PM
Subject: RE: anyone want to speak on SCC April 23 in Minnesota?

I may be interested, depending on where it is. I have friends in St. Paul that I could stay with.

Ann

From: McGartland, Al
Sent: Friday, February 06, 2015 5:11 PM
To: Newbold, Steve; Marten, Alex; Griffiths, Charles; Wolverton, Ann
Subject: anyone want to speak on SCC April 23 in Minnesota?

I think the talk is to at a law conference. I will know more early next week.

To: Marten, Alex[Marten.Alex@epa.gov]
From: Personal cell/email
Sent: Sat 2/7/2015 7:15:47 PM
Subject: Re: Workshop at Society for Benefit Cost Analysis

Still working on the scheduling for the call. I'll send something soon. Sorry for the delay.

Have a wonderful weekend.

Elisabeth

From: Marten, Alex
Sent: Saturday, February 7, 2015 6:03 AM
To: Elisabeth Gilmore

Hi Elisabeth,

Has there been any news regarding the SBCA session? I filled out the doodle pool, but I don't recall seeing an invite for a call. My apologies if I missed it.

--
Alex Marten
marten.alex@epa.gov

From: Personal cell/email
Sent: Friday, January 16, 2015 3:38 PM
To: Sarofim, Marcus; Marten, Alex; arden.rowell@gmail.com
Subject: Workshop at Society for Benefit Cost Analysis

Dear Marcus, Alex and Arden,

Thank you again for agreeing to present at the Society for Benefit Cost Analysis workshop on the social cost of carbon!

I am attaching the workshop description. In addition to the publicity from the Society, I hope that you can help by disseminating the information on this workshop through your professional networks.

We will be informed around the end of January / early February whether we have the go ahead based on our registration numbers. Assuming that we are proceeding, I'd like to schedule a conference call in early February to discuss the goals of the workshop and coordinate the presentations. Please indicate your availability in this doodle poll: <http://doodle.com/we5tuakyrp7qkwqv>.

As always, let me know if you have any questions or concerns.

Warm regards,
Elisabeth

Elisabeth Gilmore
Assistant Professor
School of Public Policy
University of Maryland
College Park, MD

To: Marten, Alex[Marten.Alex@epa.gov]
From: Dayaratna, Kevin
Sent: Fri 2/6/2015 11:07:16 PM
Subject: Re: Files to replication May 2013 SCCO2 estimates based on DICE

Thanks, Alex. Have a good weekend.

Sent from my iPhone

On Feb 6, 2015, at 6:05 PM, "Marten, Alex" <Marten.Alex@epa.gov<mailto:Marten.Alex@epa.gov>> wrote:

Hi Kevin,

Thanks for your email. Elizabeth is currently out on maternity leave, hence her out of office reply. I will look into your question when I get back into the office next week.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301<tel:%28202%29%20566-2301>
email: marten.alex@epa.gov<mailto:marten.alex@epa.gov>

From: Dayaratna, Kevin [mailto:kevin.Dayaratna@heritage.org]
Sent: Wednesday, February 04, 2015 3:48 PM
To: Marten, Alex
Subject: FW: Files to replication May 2013 SCCO2 estimates based on DICE

Alex:

I think I CC'ed you on this question I had for Elizabeth. If you could respond to it when you get a chance, that'd be great.

Hope you're doing well.

Thanks,
Kevin

Kevin Dayaratna, Ph.D.
Senior Statistician and Research Programmer
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002
202-608-1540
heritage.org<<http://heritage.org/>>

Kevin Dayaratna, Ph.D.
Senior Statistician and Research Programmer
Institute for Economic Freedom and Opportunity
The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002

202-608-1540

heritage.org<<http://heritage.org/>>

From: Kopits, Elizabeth [mailto:Kopits.Elizabeth@epa.gov]

Sent: Wednesday, February 04, 2015 11:56 AM

To: Dayaratna, Kevin

Subject: Automatic reply: Files to replication May 2013 SCCO2 estimates based on DICE

I am on maternity leave through April.

Please contact Jennifer Bowen (bowen.jennifer@epa.gov<<mailto:bowen.jennifer@epa.gov>>, 202-566-2281) for assistance.

If you have a social cost of carbon related inquiry, please contact Alex Marten (marten.alex@epa.gov<<mailto:marten.alex@epa.gov>>).

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 2/4/2015 9:21:18 PM
Subject: Re: final briefing materials

Yes, will do! Kristina had a minor edit, will send that along once I get it back from her.

From: Marten, Alex
Sent: Wednesday, February 04, 2015 3:45 PM
To: Shouse, Kate
Subject: final briefing materials

Hi Kate,

When you get a chance could you send me the final version of the SCC briefing materials for Janet?

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Marten, Alex[Marten.Alex@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
From: Barron, Alex
Sent: Wed 2/4/2015 9:22:24 PM
Subject: RE: SCC Peer Input Comms Materials

Thanks. Will review tonight.

From: Marten, Alex
Sent: Wednesday, February 04, 2015 1:04 PM
To: Barron, Alex
Cc: McGartland, Al
Subject: SCC Peer Input Comms Materials

Hi Alex,

Attached is a draft of comms materials Kate and I pulled together after our conversation yesterday.

It is based on the assumption that this is to be used after the meeting and prior to the release of the RTC at which point a revised version will be needed.

Please let me know if this along the lines of what you and Joel were thinking.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Marten, Alex[Marten.Alex@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
From: Barron, Alex
Sent: Thur 2/5/2015 5:02:28 PM
Subject: 2015 02 04 SCC RTC OIRA-CEA redline from EPA 1-26-15 ab.docx
2015 02 04 SCC RTC OIRA-CEA redline from EPA 1-26-15 ab.docx

To: Marten, Alex[Marten.Alex@epa.gov]
From: McGartland, Al
Sent: Tue 2/3/2015 3:21:03 PM
Subject: Re: SCC Check In This Morning

Thanks. I ran into Allen on my way over and let him know too. Also I hope you brought enough copies of stuff. I'm already over here.

Sent from my iPhone

On Feb 3, 2015, at 9:33 AM, Marten, Alex <Marten.Alex@epa.gov> wrote:

Allen and Kate,

Sorry for the short notice, but we are having a brief (30 min) SCC check in w/ Joel this morning at 10:30 in 3513 WJCN. If you would like to attend, or if Paul wanted to join, you would be welcome. I think the agenda will be focused on a status update of the different pieces.

Feel free to give me a call if you want more info.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Marten, Alex[Marten.Alex@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]
From: Barron, Alex
Sent: Tue 2/3/2015 5:17:42 PM
Subject: 2015 02 02 SCC RTC intro draft.docx
[2015 02 02 SCC RTC intro draft.docx](#)

Not sure we will want the last para I added, but probably worth offering to OMB at the staff level. Give me a call if you have questions.

To: Marten, Alex[Marten.Alex@epa.gov]
From: Shouse, Kate
Sent: Wed 1/28/2015 6:00:22 PM
Subject: RE: SCC Letter Writing Campaign

That's a good question – I'm trying to track it down now (I searched for it by ID# in regulations.gov but didn't turn it up); going through some of the email traffic and will let you know what I find. I think it may have been submitted to OMB via email (versus uploading to regulations.gov) and a file got corrupted. Need to jump on a call but will turn back this afternoon. We may need to ask OMB (Margo Schwab) for a copy of the letter.

From: Marten, Alex
Sent: Wednesday, January 28, 2015 12:34 PM
To: Shouse, Kate
Subject: SCC Letter Writing Campaign

Hi Kate,

Do you happen to have a copy of the form letter from the SCC comments that had 36,000+ signatures?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]
From: Marten, Alex
Sent: Thur 7/9/2015 12:56:42 PM
Subject: Re: confirming erratum

Yeah I guess not everyone is as slow as OMB at publishing revisions :)

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

On Jul 9, 2015, at 7:16 AM, Shouse, Kate <Shouse.Kate@epa.gov> wrote:

Wow, that was fast! Thanks for the update.

Sent from my iPhone


On Jul 8, 2015, at 4:42 PM, Marten, Alex <Marten.Alex@epa.gov> wrote:

It should be published online tomorrow. I will send you the reference and a copy as soon as I have it.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, July 08, 2015 4:41 PM
To: Marten, Alex
Subject: confirming erratum

Hi, Alex. We're briefing Paul tomorrow on  and SC-CH4 is on the agenda.
Just wanted to confirm that you did/are going to submit the erratum to Climate Policy;

I think this may be the only update, given that Paul is up to speed on all things SCC.

Thanks,
Kate

To: Bryson, Joe[Bryson.Joe@epa.gov]
Cc: Evans, DavidA[Evans.DavidA@epa.gov]
From: Marten, Alex
Sent: Thur 6/25/2015 9:08:39 AM
Subject: Re: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Thanks Joe.

Non-Responsive

Non-Responsive

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

On Jun 24, 2015, at 5:19 PM, Bryson, Joe <Bryson.Joe@epa.gov> wrote:

Non-Responsive

From: Vicki Ekstrom High <vekstrom@uchicago.edu>
Subject: Media Release: Study Finds Costs of Residential Energy Efficiency Investments

are Double the Benefits

Date: June 23, 2015 3:07:32 PM CDT

To: <gregory.k.busch@gmail.com>

Reply-To: Vicki Ekstrom High <vekstrom@uchicago.edu>

FOR IMMEDIATE RELEASE

June 23, 2015

Contact: Vicki Ekstrom High

Energy Policy Institute at Chicago

vekstrom@uchicago.edu

Study Finds Costs of Residential Energy Efficiency Investments are Double the Benefits
New evidence supports the need for additional policy solutions to confront climate change while more field evidence is gathered to identify the most beneficial energy efficiency investments.

Chicago, Ill. - Energy efficiency investments are widely popular because they are believed to deliver a double win: saving consumers money by reducing the amount of energy they use, while cutting climate-forcing greenhouse gas emissions and other pollutants harmful to human health. But a new study by a team of economists finds residential energy efficiency investments may not deliver on all that they promise. Through a randomized controlled trial of more than 30,000 households in Michigan - where one-quarter of the households were encouraged to make residential energy efficiency investments and received assistance - the economists find that the costs to deploy the efficiency upgrades were about double the energy savings.

"Energy efficiency investments hold great potential as a means to fight climate change.

However, we found that, at least in the case of residential energy efficiency investments, the projected savings overestimate the reality on the ground," says Michael Greenstone, the Milton Friedman professor of economics and director of the Energy Policy Institute at the University of Chicago (EPIC). "A problem as urgent as climate change must be addressed using policies that deliver the greatest bang for their buck. As policymakers design climate policies, these findings suggest that a market-based approach that puts a price on carbon would likely be more effective. In the meantime, it is critical that we field test energy efficiency programs to determine which investments offer the greatest potential."

The study - a part of The E2e Project and led by Greenstone, as well as Meredith Fowlie and Catherine Wolfram of UC Berkeley - assessed the nation's largest residential energy efficiency program, the Federal Weatherization Assistance Program (WAP). Participating low-income households were provided with about \$5,000 worth of weatherization upgrades (e.g. furnace replacement, attic and wall insulation, and weather stripping) per home at zero out-of-pocket costs. While the researchers found that the upgrades did reduce the households' energy consumption by about 10 to 20 percent each month that only translated into \$2,400 in savings over the lifetime of the upgrades - half of what was originally spent

to make the upgrades, and less than half of projected energy savings.

. Read a summary of the study.

"Energy efficiency programs are generally viewed as cost effective. This view is often based on engineering calculations and associated savings projections," says Fowle, an associate professor of resource economics and Class of 1935 Endowed Chair in Energy at UC Berkeley. "Our data-driven analysis that measures the actual returns on energy efficiency investments shows how these projections can be quite flawed. In actuality, the energy efficiency investments we evaluated delivered significantly lower savings than the models predict."

Past studies have claimed that energy efficiency investments don't deliver the expected energy savings because of a 'rebound effect': households adjust their behaviors and consume more energy services than they had before the investments were made. However, the economists could find no evidence of this 'rebound effect' in the households they studied.

Further, some say that the broader societal benefits - savings as a result of reductions in pollution from energy production- justify the investments. Again, the findings did not support this. The cost per ton of CO₂ avoided in the sample amounted to \$329, significantly larger than the \$38 per ton that the federal government estimates as the social cost of carbon.

Another claim is that energy efficiency programs have a low take-up rate because consumers don't know about the programs or how to participate, driving down the expected benefits. To investigate this, the authors studied whether extensive outreach and assistance would boost the take-up rate of the program. Using a firm with extensive experience in managing outreach campaigns, the research team made almost 7,000 home visits, more than 32,000 phone calls, and 2,700 follow-up appointments. Yet, despite this aggressive outreach and personal assistance, only 6 percent of households in the treatment group participated in the program, compared to 1 percent in the control group. In the end, it cost more than \$1,000 for each additional household encouraged to undertake these free energy efficiency investments.

"At the end of the day, the models don't capture some of the hard-to-quantify costs involved in making energy efficient choices, which could help explain why people aren't taking advantage of the opportunities as much as the models predict," says Wolfram, the Cora Jane Flood professor of business administration at UC Berkeley's Haas School of Business and faculty director at the Energy Institute at Haas. "This is another reason why potential energy efficiency investments need to be rigorously tested in real-world conditions before relying too heavily on them to solve climate change."

This research was made possible thanks to generous support from the Alfred P. Sloan Foundation, the MacArthur Foundation, the Rockefeller Foundation, and the UC Berkeley Energy and Climate Institute.

Read a summary of the study [here](#).

Read the full study here.

To receive updates on energy efficiency research from The E2e Project, click here.

About the Energy Policy Institute at Chicago (EPIC)

Energy powers our modern world, fueling innovation and improving living standards across the globe. But delivering access to reliable and affordable energy, while limiting its social, environmental and climate impacts, is one of society's greatest and most complex challenges. The Energy Policy Institute at the University of Chicago (EPIC) is contributing solutions using a unique, interdisciplinary approach that translates cutting-edge research into real-world impacts through strategic outreach, and training for the next generation of global energy leaders. EPIC collaborates with the Center for Energy and Environmental Policy Research at MIT and the Energy Institute at UC Berkeley's Haas School of Business, through The E2e Project, on research that aims to uncover the causes and consequences of energy efficiency investments. <http://epic.uchicago.edu>
###

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Chicago, IL 60637

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-----Original Message-----

From: Marten, Alex

Sent: Wednesday, June 24, 2015 2:23 PM

To: Bryson, Joe

Cc: Evans, DavidA

Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Repository

Certainly, I would be interested to hear what you think. We are likely to hear more about RCTs so it would be good to know why you think there results aren't generalizable. I haven't read this version, but when I read an earlier working draft I put this in the camp of mounting evidence against the viability of ex ante engineering assessments of performance. Didn't see why it would only be applicable to low income programs.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe
Sent: Wednesday, June 24, 2015 11:34 AM
To: Marten, Alex
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

If you want to discuss this paper further, at some point, let us know. We're taking a look. In short - it seems to be suggesting a relevance to broader EE EM&V (beyond low income) that is not supported/warranted.

-----Original Message-----

From: Marten, Alex
Sent: Wednesday, June 24, 2015 11:26 AM
To: Bryson, Joe
Cc: Evans, DavidA
Subject: RE: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

It's an interesting paper, certainly has important implications for using EE programs to deal with distributional/equity issues.

Fair point. Next time I talk to Meredith or Michael I will admonish the misuse of the English language :)

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

-----Original Message-----

From: Bryson, Joe

Sent: Wednesday, June 24, 2015 8:25 AM
To: Marten, Alex; Evans, DavidA
Subject: FW: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

Suspect you've see reference to this paper that's making the news.

BTW - These economists use "energy savings" all throughout this paper.

-----Original Message-----

From: Joseph Bryson [Personal cell/email]
Sent: Wednesday, June 24, 2015 3:00 AM
To: Joe Bryson; Bryson, Joe
Subject: Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program | Becker-Friedman Institute Research Respository

<http://econresearch.uchicago.edu/content/do-energy-efficiency-investments-deliver-evidence-weatherization-assistance-program>

Sent from my iPad

To: Ferris, Ann[ferris.ann@epa.gov]
Cc: Evans, DavidA[evans.davida@epa.gov]; Macpherson, Alex[Macpherson.Alex@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Thur 5/28/2015 7:55:28 PM
Subject: 111(d) labor question
2015 05 28 111(d) preamble (impacts section XI) SCC update (05 27 15) ek alm.docx

Hi Ann,

Could you please take a look at my suggested edit on page 16. There

Non-Responsive

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Wed 4/22/2015 12:15:56 AM
Subject: RE: Bi-Weekly - Priority Regulations Conference code

No apology necessary. I'm always happy to talk about the SCC work we are doing.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Tuesday, April 21, 2015 7:54 PM
To: Marten, Alex
Subject: Re: Bi-Weekly - Priority Regulations Conference code

Thanks, and sorry we don't plan better for these meetings.

On Apr 21, 2015, at 7:35 PM, Marten, Alex <Marten.Alex@epa.gov> wrote:

Sure thing.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Tuesday, April 21, 2015 7:35 PM
To: Marten, Alex
Subject: Re: Bi-Weekly - Priority Regulations Conference code

Al thought they would be interested in an update, would that be doable?

On Apr 21, 2015, at 6:20 PM, Marten, Alex <Marten.Alex@epa.gov> wrote:

Hi Jenny,

Do you know what about the SCC will be discussed? If I am supposed to have anything prepped just let me know.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer

Sent: Tuesday, April 21, 2015 5:24 PM

To: McGartland, Al; Massey, Matt; Nagelhout, Peter; Simpson, David; Jenkins, Robin; Sheriff, Glenn; Rees, Sarah; Wolverton, Ann; Newbold, Steve; Johnson, Ann; Dockins, Chris; Kopits, Elizabeth; Balserak, Paul; Gilbreath, Jan; Cooperstein, Sharon; Cristofaro, Alexander; Walsh, Patrick; Nickerson, William; Schillo, Bruce; Marten, Alex; Evans, DavidA; Morgan, Cynthia; Thundiyil, Karen; Klemick, Heather; Farber, Glenn; Simon, Nathalie

Cc: Snyder, Brett; Miller, Kristen; Maguire, Kelly

Subject: RE: Bi-Weekly - Priority Regulations

Conference code

Meeting in 4144 West – or feel free to call in per the number above.

Non-Responsive

- **Non-Responsive**

-----Original Appointment-----

Sent: Wednesday, June 18, 2014 2:40 PM

Cc: Snyder, Brett; Miller, Kristen; Maguire, Kelly

When: Wednesday, April 22, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

ED 442-001487522

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Mon 4/13/2015 8:25:41 PM

Subject: RE: SCC website

Thanks Kate. Personally I think this makes sense. OP management didn't have a particularly strong preference last time I checked in. If you hear anything from your management with regards to a preference please let me know.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Shouse, Kate

Sent: Tuesday, April 07, 2015 4:00 PM

To: Marten, Alex

Subject: SCC website

Hi, Alex. If there's interest in posting the methane reviews on the web, I think we could set up a link on this site: <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html>

Was thinking we could add a paragraph (2-3 sentences) above "For more information see..." Am thinking the new paragraph could borrow heavily from the desk statement you (and Alex B?) wrote when Marten et al was published and note that the application of the estimates was peer-reviewed. The sentence on the application peer-review could provide links to PDFs of the three responses we received.

Would also be a good opportunity to update the SC-CO2 table to 2012\$ and update the notation throughout the page (SCC to SC-CO2, etc).

Please keep me posted if you receive any management feedback and I'll check in with Allen and others in OAR.

Thanks,
Kate

To: Shouse, Kate[Shouse.Kate@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Fri 4/10/2015 1:00:44 PM
Subject: RE: General SCC matters

Works for me.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Friday, April 10, 2015 9:00 AM
To: Fawcett, Allen; McGartland, Al
Cc: Marten, Alex
Subject: RE: General SCC matters

Thanks, Allen. That's also good for me. Does that work for OP?

From: Fawcett, Allen
Sent: Friday, April 10, 2015 8:59 AM
To: McGartland, Al
Cc: Shouse, Kate; Marten, Alex
Subject: Re: General SCC matters

This morning before 11 works best for me.

Allen

On Apr 10, 2015, at 8:50 AM, McGartland, Al <McGartland.Al@epa.gov> wrote:

We can move our meeting. What time works?

Sent from my iPhone

On Apr 10, 2015, at 8:46 AM, Shouse, Kate <Shouse.Kate@epa.gov> wrote:

Hi, Al. There is an oil and gas RIA call at the same today and I think Alex Marten is also on that call. Should we try to move the O&G call or is there room to do this SCC meeting a little bit earlier today? FYI, Paul is on travel today so it will be just Allen and me.

Thanks,
Kate

-----Original Appointment-----

From: McGartland, Al

Sent: Friday, April 10, 2015 7:41 AM

To: Barron, Alex; Marten, Alex; Fawcett, Allen; Shouse, Kate; Gunning, Paul

Subject: General SCC matters

When: Friday, April 10, 2015 2:00 PM-3:00 PM America/New_York.

Where: 4424 wjc west

To: Rowell, Arden[karowell@illinois.edu]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 4/6/2015 4:26:28 PM
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

That's an interesting idea. It reminded me that the EU through the PESETA project has done some work w/ tourism, but I'm not sure if they have addressed this issue in there.

<http://peseta.jrc.ec.europa.eu/>

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Rowell, Arden [mailto:karowell@illinois.edu]
Sent: Monday, April 06, 2015 12:22 PM
To: Marten, Alex
Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

Awesome--thanks so much. Particularly interesting re: the "everything else" box in the most recent DICE version. Seems like may be more opportunities to incorporate some sort of "special cultural value" measure as the models get better at determining localized & regional impact. Could look at tourist dollars spent or something. Apparently Mastercard creates a list every year of "most visited cities" http://newsroom.mastercard.com/wp-content/uploads/2014/07/Mastercard_GDCI_2014_Letter_Final_70814.pdf (Bangkok pretty much ties London--who would have thought?). Anyway, thanks again--super helpful!

PS What about Venice! Venice!!

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

From: Marten, Alex [Marten.Alex@epa.gov]

Sent: Monday, April 06, 2015 11:05 AM

To: Rowell, Arden

Subject: RE: hi! and quick question on community/cultural artifact valuation in the SCC

I think in general that is a safe assumption. But I will note that in earlier version of the DICE model Nordhaus had a human settlements category which he acknowledged was speculative, but this is the type of thing he was trying to capture. In the most recent version of DICE he has a catch all category which he might argue is trying to capture an adjustment for hard to measure things such as this. FUND does not account for this, and I don't recall any of the PAGE literature talking about this issue.

I hope that helps.

P.S. Your example made me smile because the Italians are really big on this point in general (not just wrt the IAMs) and bring it up all the time at international events.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Rowell, Arden [<mailto:karowell@illinois.edu>]

Sent: Monday, April 06, 2015 11:57 AM

To: Marten, Alex

Subject: hi! and quick question on community/cultural artifact valuation in the SCC

Hi Alex! Hope all's well. Quick question: can you think of any examples within FUND, DICE, or PAGE of valuation of communities, groups, or cultural artifacts rather than individualized damage? So, e.g.,

suppose that someone thought that the culture of the Laplanders was important separate from individualized harm to individual Laplanders, or that Venice was important for cultural reasons that go beyond harm to Venetians. Anything in any of the IAMs on that? I was thinking there wasn't anything on any of that stuff in any of the models (and I guess there could be double-counting concerns if there were), but figured you'd be the person to know.

All best,

Arden Rowell

Associate Professor and Richard W. and Marie L. Corman Scholar

University of Illinois College of Law

karowell@illinois.edu

http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=1610155

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Thur 4/2/2015 1:27:50 PM

Subject: FW: New Adventure

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

Begin forwarded message:

From: "Johnson, Laurie" <ljohnson@nrdc.org>

Date: March 26, 2015 at 5:58:10 PM EDT

To: "Johnson, Laurie" <ljohnson@nrdc.org>

Subject: New Adventure

Dear Colleagues,

I'm writing to let you know I'll be leaving NRDC so that I can focus 100% of my time on an independent research project I'm launching in partnership with the University of Massachusetts, several New Jersey High Schools, and my collaborator, Sieren Ernst. Sieren is Principal and Founder of Ethics & Environment, a DC based consulting firm focusing on climate change policy. I will also continue contributing to the Cost of Carbon Pollution project and other research at New York University Law School's Institute for Policy Integrity, as an Affiliated Scholar.

My new contact information is further below.

For those of you interested in knowing a little more about the project: it is a "citizen science" effort combining an inter-high school climate cost data collection assignment with a video competition. It aims to engage students in assessing climate damages in their own communities—and collect data on those damages. If successfully demonstrated (we are starting with a pilot), we're hoping to expand data collection into an open access data base platform to citizens at large who can submit their own cost data. (Not familiar with broad-based citizen science data collection? Here's a neat example assessing bird populations and patterns housed at Cornell).

The idea developed out of my years at NRDC advocating for a more comprehensive "social cost of

carbon” (SCC), the benefit-per-ton-of-CO2 metric used by the government to estimate carbon pollution reduction benefits—and the difficulty in communicating what a “price” on carbon means to normal people. I’ve also been frequently frustrated when getting inquiries on climate change costs (from reporters, all of you! □, etc.)...I hope to change that and, by documenting, quantifying, and assessing impacts, and empowering communities to give and receive that information. Of course, the collected impact data won't differentiate between what is due to climate change versus not. Rather it is intended to start assessing known and unknown costs—to highlight adaptation and mitigation needs, and help citizens advocate their unique needs.

It’s going to be an invigorating challenge. Wish me luck!

My new email signature contains all my relevant contact and affiliation information, and a more generalized description of the project.

Laurie T. Johnson, Ph.D.

Affiliated Scholar, *New York University School of Law, Institute for Policy Integrity*

Senior Economic Advisor, *Ethics & Environment*, and Director of the Citizen Climate Cost Project***

Email addresses: laurie.johnson@nyu.edu and ljohnson@ethicsenvironment.com

(p) 202-779-3109

***The Citizen Climate Cost Project (CCCP) is a unique collaboration from Ethics & Environment between high school students, academics, citizens and civic society institutions. Our mission encompasses several goals, including assessing and measuring impacts of climate change on American communities; actively engaging students and citizens in quantifying its costs; providing citizens with information to advocate for their specific needs; and providing researchers and policy makers with data needed to develop sound adaptation and mitigation strategies.

The project is a first-of-its-kind citizen science effort consisting of several development stages that will reach an expanding audience. For more information about ----CCCP, please contact me at ljohnson@ethicsenvironment.com, or Sieren Ernst, Principal, Ethics & Environment at sernst@ethicsenvironment.com.

Laurie T. Johnson, Ph.D.

Chief Economist, Climate and Clean Air Program

Natural Resources Defense Council

1152 15th St NW Ste 300

Washington D.C., 20009

(o) 202-513-6274

(m) 202-779-3109 PLEASE NOTE new cell number

Blog: <http://switchboard.nrdc.org/blogs/ljohnson/>

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Tue 3/31/2015 8:06:28 PM

Subject: RE: SCC brownbag handouts

thanks

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Shouse, Kate

Sent: Tuesday, March 31, 2015 4:05 PM

To: Gordon, Jessica M; Li, Jia; Marten, Alex

Subject: FW: SCC brownbag handouts

FYI – all of the handouts are attached. Wasn't much discussion in the Q&A; it also cut off abruptly (not sure if it was an EPA problem or DC Bar) so I did not catch everything.

Jessica, will catch up with you on the last speaker's comments when you get a moment. In short, he is skeptical of the SCC estimates and not a fan of using them in NEPA analyses.

From: Shouse, Kate

Sent: Tuesday, March 31, 2015 1:28 PM

To: Shouse, Kate

Subject: SCC brownbag handouts

attached

To: Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 3/30/2015 8:11:58 PM
Subject: RE: SCC brownbag: OAP reserved room for webinar

thanks

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, March 30, 2015 4:09 PM
To: Marten, Alex
Subject: RE: SCC brownbag: OAP reserved room for webinar

Sorry, I'll attach the correct one this time. Jessica booked room 4228A in WJCS (walk past my desk towards WJCN).

From: Marten, Alex
Sent: Monday, March 30, 2015 4:07 PM
To: Shouse, Kate
Subject: RE: SCC brownbag: OAP reserved room for webinar

Thanks Kate. What's the room number? It seems to be missing from the invite you sent.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, March 30, 2015 4:03 PM
To: Marten, Alex
Subject: SCC brownbag: OAP reserved room for webinar

In case your plans change tomorrow, you (or anyone else interested) are welcome to join us.
Room details attached.

To: Birnbaum, Rona[Birnbaum.Rona@epa.gov]; Fawcett, Allen[Fawcett.Allen@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 3/30/2015 5:57:09 PM
Subject: FW: Invitation to speak on economics of climate change at Washington Energy Conference at SAIS, April 29
[NCAC-SAIS Energy Conference \(Draft\) 03_25_15.docx](#)

Hi Rona/Allen,

I received this request last week, but I think you or one of your folks might be better suited to fill this speaking role given the CIRA work. Would you like me to forward your names to Wil?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Wil Kohl [mailto:wkohl@jhu.edu]
Sent: Thursday, March 26, 2015 5:02 PM
To: Marten, Alex
Subject: Invitation to speak on economics of climate change at Washington Energy Conference at SAIS, April 29

Dear Dr. Marten,

I have your name from a colleague at Resources for the Future. I am a faculty member at Johns Hopkins SAIS in the Energy, Resources, and Environment Program. We are currently planning our annual conference on April 29, co-sponsored with the US Assoc. of Energy Economic, on the general theme of "the Economic costs of (Not) Utilizing Existing Fossil Fuel Reserves to Meet Potential Limits on GHGs." See attached agenda. We are looking for a speaker who could discuss the costs of catastrophic climate change and/or the costs of various mitigation strategies. Would you or one of your colleagues be interested in speaking on this topic at our conference?

This conference is part of a series of conferences organized by the SAIS Energy, Resources and Environment Program, one of the largest programs at the School. The audience will be approx.

100 people, a mix of energy/environment professionals from around DC plus SAIS graduate students. The conference will be held in the SAIS Nitze Bldg. at 1740 Mass. Ave. NW. It would be a pleasure to have you or one of your colleagues to speak at the conference. Please let me know if you have any questions.

With kind regards, Prof. Wil Kohl, Johns Hopkins School of Advanced International Studies (tel.

Personal cell/email

To: Shouse, Kate[Shouse.Kate@epa.gov]
From: Marten, Alex
Sent: Thur 3/19/2015 12:45:35 AM
Subject: Re: SCC and regulation brownbag

Thanks for sending this. I think I might try to attend in person.

--

Alex Marten
marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, March 18, 2015 2:33 PM
To: Marten, Alex
Subject: FW: SCC and regulation brownbag

FYI – I signed up for the webinar version of this SCC brownbag and I think Jessica Gordon (an attorney in our division) is going in person. Speakers include Kevin Dayaratna (Heritage) and Laurie Johnson (NRDC). The registration is kind of annoying – they charge a fee and the fee varies depending whether you do the webinar or go in-person, requiring you to decide in advance how you'll participate.

From: Gordon, Jessica M
Sent: Monday, March 16, 2015 10:02 AM
To: Irving, Bill; Shouse, Kate; Li, Jia; Fawcett, Allen
Subject: SCC and regulation brownbag

Hi,

I wanted to let you know (if you don't already) about a DC Bar brownbag on using SCC in to justify regulation. It will be 12-1:30 pm on 3/31 at 1101 K St. NW. I'm planning to go; let me know if you'd like to go together. The details and registration are at:

<http://www.eli.org/events/measuring-social-cost-carbon-promise-and-pitfalls-using-scc-justify-regulation>

Jessica

Jessica M. Gordon

Attorney-Advisor, Climate Change Division
U.S. Environmental Protection Agency
(202) 343-9444
gordon.jessica@epa.gov

This message may contain privileged or other confidential information.
Please do not forward or distribute it outside of EPA.

To:
Bcc:
From: Marten, Alex
Sent: Tue 3/17/2015 9:46:45 PM
Subject: RE: SBCA workshop participants
[marten SBCA IAM SCC presentation.pdf](#)

Personal cell/email

Hi Elisabeth,

Sorry for not getting these to you sooner. I got dragged into six hours of meetings and didn't have a chance to get back to my desk.

Attached please find a copy of my slide deck. Unfortunately it is designed for presenting not printing so it will be quite a thick deck printed. I had the best intentions to create a "handout" version w/o some of the dynamic stuff but I ran out of time.

See you tomorrow.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: **Personal cell/email**
Sent: Monday, March 16, 2015 12:09 AM
To: Sarofim, Marcus; **Personal cell/email** Marten, Alex
Subject: SBCA workshop participants

Hi All,

The list of workshop participants is below.

Let me know if you have any other questions leading up to Wednesday. Please try to send your slides on Tuesday as it will make it easier for me to make copies. Let me

know if you foresee any delays.

On Wednesday, please arrive by 1 pm at the George Washington University Milken Institute School of Public Health.

Just in case, my cellphone at

Personal cell/email

Warmly,

Elisabeth

Bill Anderson, Bureau of Ocean Energy Management

Smita Bhatia, Spectra

Brittany Bolen, Senate Environment and Public Works Committee

Sarah Peters Coffman, Bureau of Ocean Energy Management

Shelly Gardiner, Epiphanomics

Andrew McClymont, Cyclac Corporation

John Norman, ExxonMobil

Alison Saperstein, University of Washington

Amy Stillings, Bureau of Ocean Energy Management

John Wehner, Wehner Consulting

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Thur 3/12/2015 5:35:57 PM
Subject: RE: new paper, but this time noncontroversial

no worries.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Thursday, March 12, 2015 1:35 PM
To: Marten, Alex
Subject: FW: new paper, but this time noncontroversial

Sorry for this email, I got a year behind – thinking this came a couple months ago, not over a year ago...

From: Bowen, Jennifer
Sent: Wednesday, March 11, 2015 9:30 AM
To: Marten, Alex
Subject: Re: new paper, but this time noncontroversial

Hi Alex,

This is an old email I just came across, and wanted to be sure this was resolved?
Thanks.

Non-responsive

Jenny

566-2281

From: Marten, Alex
Sent: Friday, January 10, 2014 12:49 PM
To: McGartland, Al
Cc: Bowen, Jennifer
Subject: FW: new paper, but this time noncontroversial

Hi Al,

I just wanted to follow up about the paper draft I sent at the beginning of December.

Ex 5

Ex 5

Ex 5

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Marten, Alex
Sent: Tuesday, December 03, 2013 5:02 PM
To: McGartland, Al
Cc: Bowen, Jennifer
Subject: new paper, but this time noncontroversial

Hi Al,

I have a new paper I would like to incorporate into our working paper series and possibly submit for publication.

Ex 5

Ex 5

The paper is focused on the role of socioeconomic and emissions uncertainty in estimating the SCC and is based on the work that we engaged Mort Webster on using his CGE model. The results turned out to be quite surprising as the main role of scenario uncertainty came through its effect on the certainty equivalent discount rate. However, uncertainty over the socioeconomic and emission baseline has only a marginal effect on the SCC through the actual level of projected damages, at least within the framework I used.

Ex 5

Thanks

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Fawcett, Allen[Fawcett.Allen@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Wed 3/11/2015 8:17:45 PM
Subject: SCC meeting w/ Joel

Allen/Kate,

I just forwarded an invite for an SCC meeting w/ Joel tomorrow afternoon at 3:00. He asked to be briefed on the content of the NRC comments and the general status of the process. You are welcome to attend but please don't feel like it is a requirement, that wasn't my intention in forwarding it.

I am going to try and draft a one page summary of the comments and general status.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
From: Marten, Alex
Sent: Wed 3/11/2015 2:07:46 PM
Subject: Re: new paper, but this time noncontroversial

Yep. The paper was published in Climate Economics this past fall.

And yes, the court didn't want me on the jury.

--

Alex Marten
marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Wednesday, March 11, 2015 9:29:51 AM
To: Marten, Alex
Subject: Re: new paper, but this time noncontroversial

Hi Alex,

This is an old email I just came across, and wanted to be sure this was resolved?
Thanks.

Are you off the hook for jury duty?

Jenny
566-2281

From: Marten, Alex
Sent: Friday, January 10, 2014 12:49 PM
To: McGartland, Al
Cc: Bowen, Jennifer
Subject: FW: new paper, but this time noncontroversial

Hi Al,

I just wanted to follow up about the paper draft I sent at the beginning of December. In addressing comments we received on the non-CO2 paper it would be

very helpful for us to be able to cite this other paper on scenario uncertainty.

Therefore I was just wondering whether it would be acceptable to place it in the working paper series?

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Marten, Alex
Sent: Tuesday, December 03, 2013 5:02 PM
To: McGartland, Al
Cc: Bowen, Jennifer
Subject: new paper, but this time noncontroversial

Hi Al,

I have a new paper I would like to incorporate into our working paper series and possibly submit for publication. Though this time I am really hoping that what I am bringing forth is noncontroversial. Except for the fact that it deals w/ the SCC it is really focused on a technical issue and I would be very surprised if folks found it objectionable.

The paper is focused on the role of socioeconomic and emissions uncertainty in estimating the SCC and is based on the work that we engaged Mort Webster on using his CGE model. The results turned out to be quite surprising as the main role of scenario uncertainty came through its effect on the certainty equivalent discount rate. However, uncertainty over the socioeconomic and emission baseline has only a marginal effect on the SCC through the actual level of projected damages, at least within the framework I used.

I realize that with the transition there might be some ambiguity in terms of the process for getting approval now, so please let me know if there are specific steps I should be taking. I am looking forward to getting comments from folks in OAR, but will hold off from sharing with anyone outside of NCEE until I get the OK from you.

Thanks

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 3/9/2015 5:29:35 PM
Subject: RE: checking in
2015 03 04 oil and gas RIA benefits chapter - alm.docx

Attached are my comments on the O&G RIA chapter. I am happy to discuss any of the my edits in more detail. In favor of a quicker turn around I haven't proved comment bubbles for all of my suggestions so really just ask if there are any questions.

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, March 09, 2015 12:06 PM
To: Marten, Alex
Subject: RE: checking in

Will do.

From: Marten, Alex
Sent: Monday, March 09, 2015 12:04 PM
To: Shouse, Kate
Subject: RE: checking in

Hi Kate,

I am just about done w/ the RIA text. Have a meeting now, but will send before 1:30.

I haven't looked at the landfill preamble text, but if you make edits would you mind sending to me?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, March 09, 2015 11:31 AM
To: Marten, Alex
Subject: checking in

Hi, Alex. Hope you had a good weekend. Just wanted to touch base as I was also out of the office on Friday. Have you had a chance to review either the landfills preamble (SC-CH4 section) or the oil and gas RIA (SC-CH4 section) I sent last week? I am going to be updating the landfills text today; just heard from OAQPS that there are some CO2 impacts (sounds like a net reduction in CO2) and will work that into the benefits discussion too.

Thanks,
Kate

To: Bowen, Jennifer[Bowen.Jennifer@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Fri 2/13/2015 2:52:37 PM
Subject: RE: Administrator Updates- Last Call Pls (by 10AM)

OK great, unfortunately I don't have anything else for the list this week.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Friday, February 13, 2015 9:51 AM
To: Marten, Alex
Subject: Re: Administrator Updates- Last Call Pls (by 10AM)

yes Al is covering it -- thanks!

Jenny

566-2281

From: Marten, Alex
Sent: Friday, February 13, 2015 9:46 AM
To: Bowen, Jennifer
Subject: RE: Administrator Updates- Last Call Pls (by 10AM)

Is the meeting w/ the NAS on SCC already on the list?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Bowen, Jennifer
Sent: Friday, February 13, 2015 9:46 AM
To: OP-NCEE-RPSD
Subject: Fw: Administrator Updates- Last Call Pls (by 10AM)

anyone have anything they would like to quickly include in the weekly email from Joel to the Administrator? Please send me a couple sentences if so. Thanks and sorry for the extremely short notice.

Jenny

566-2281

From: McGartland, Al
Sent: Friday, February 13, 2015 8:56 AM
To: Bowen, Jennifer; Snyder, Brett; Simon, Nathalie
Subject: Fwd: Administrator Updates- Last Call Pls

Sent from my iPhone

Begin forwarded message:

From: "Kime, Robin" <Kime.Robin@epa.gov>
Date: February 13, 2015 at 8:24:38 AM EST
To: "Connors, Sandra" <Connors.Sandra@epa.gov>, "McGartland, Al" <McGartland.Al@epa.gov>, "Cristofaro, Alexander" <Cristofaro.Alexander@epa.gov>, "Dalbey, Matthew" <Dalbey.Matthew@epa.gov>
Subject: Administrator Updates- Last Call Pls

Hi

Just a reminder to send me any updates for the Administrator by 10 a.m. today. Thanks

and have a nice day/weekend.

To: Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Thur 2/12/2015 10:44:43 PM
Subject: RE: technical expertise

Thanks for this Kate. I had a version of it with me ready to go. I'm actually surprised this didn't come up.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, February 11, 2015 3:59 PM
To: Marten, Alex
Subject: technical expertise

Hi, Alex. I started a list of technical expertise relevant to the panel members. Not sure if this is what folks had in mind – these are kind of general but perhaps a starting point for discussions with the Board.

Technical expertise for panel members

- Climate change science
 - Modeling climate and physical systems
 - Climate change assessments (e.g., experience/knowledge of IPCC assessments and the state of the literature)
- Climate change impacts and damages
 - Estimation of economic damages from climate change impacts (in particular, agriculture,

water, energy, human health)

- Catastrophic climate change and implications for modeling physical and economic impacts
- Benefit cost analysis (probably too broad but thinking something to this effect for questions about the use/presentation of uncertainty and perhaps criteria for SCC selection)
- Uncertainty analysis
- Integrated assessment models
- Model development
- Scenario analysis

To: Sarofim, Marcus[Sarofim.Marcus@epa.gov]; Arden Rowell [Personal cell/email]
[Personal cell/email]
Bcc: [Personal cell/email]
From: Marten, Alex
Sent: Thur 2/12/2015 10:27:18 PM
Subject: RE: Workshop at Society for Benefit Cost Analysis

That works for me as well

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Sarofim, Marcus
Sent: Thursday, February 12, 2015 3:32 PM
To: Arden Rowell; [Personal cell/email]
Cc: Marten, Alex
Subject: RE: Workshop at Society for Benefit Cost Analysis

Tuesday the 17th, 9 am, works for me,

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch

From: Arden Rowell [Personal cell/email]
Sent: Thursday, February 12, 2015 3:30 PM
To: [Personal cell/email]
Cc: Sarofim, Marcus; Marten, Alex
Subject: Re: Workshop at Society for Benefit Cost Analysis

Works for me!

Sent from my iPhone

On Feb 12, 2015, at 1:51 PM
wrote:

Personal cell/email

Dear Arden, Alex and Marcus,

With my apologies, I have been severely under weather this week.

We have been given the green light by the SBCA for our workshop. We have six people attending our workshop at the early registration deadline. I anticipate that there are another few more before the registrations deadline. These numbers are consistent with previous enrollments.

Could we try again for a conference call on February 17 at 9 am? Please let me know as soon as possible of your availability.

Warm regards,

Elisabeth

From: [Elisabeth Gilmore](#)

Sent: Friday, January 16, 2015 3:38 PM

To: [Marcus Sarofim](#), marten.alex@epa.gov,

Personal cell/email

Dear Marcus, Alex and Arden,

Thank you again for agreeing to present at the Society for Benefit Cost Analysis workshop on the social cost of carbon!

I am attaching the workshop description. In addition to the publicity from the Society, I hope that you can help by disseminating the information on this workshop through your professional networks.

We will be informed around the end of January / early February whether we have the go ahead based on our registration numbers. Assuming that we are proceeding, I'd like to schedule a conference call in early February to discuss the goals of the workshop and coordinate the presentations. Please indicate your availability in this doodle poll: <http://doodle.com/we5tuakyrp7qkwqv>.

As always, let me know if you have any questions or concerns.

Warm regards,

Elisabeth

Elisabeth Gilmore

Assistant Professor

School of Public Policy

University of Maryland

College Park, MD

To: Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Sarofim, Marcus[Sarofim.Marcus@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Wed 2/11/2015 5:53:11 PM
Subject: RE: SCC RTC Comments

That sounds great.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, February 11, 2015 12:07 PM
To: Marten, Alex
Cc: Sarofim, Marcus
Subject: RE: SCC RTC Comments

Thanks, Alex. Spoke with Marcus and plan is for me to review on Friday, then pass on to Marcus so he can review over the weekend (best time for him) and pass back to you.

From: Marten, Alex
Sent: Wednesday, February 11, 2015 9:44 AM
To: Shouse, Kate; Sarofim, Marcus
Subject: RE: SCC RTC Comments

I'll leave that up to you and Marcus. I will probably take it last and I'm completely fine if that means Wednesday night.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Tuesday, February 10, 2015 3:49 PM
To: Marten, Alex; Sarofim, Marcus
Subject: FW: SCC RTC Comments

Just wanted to touch base about when you both think you might be able to review the draft next. Right now either Friday (2/13) or Wednesday (2/18) look best for me but I'm happy to juggle if that doesn't look great for either of you.

Thanks!

Kate

From: Newbold, Steve
Sent: Tuesday, February 10, 2015 3:46 PM
To: Marten, Alex; Griffiths, Charles; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Ok I'll take a look next

From: Marten, Alex
Sent: Tuesday, February 10, 2015 3:24 PM
To: Griffiths, Charles; Newbold, Steve; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

That sounds like a great plan. Thank you!

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Griffiths, Charles
Sent: Tuesday, February 10, 2015 2:37 PM
To: Newbold, Steve; Marten, Alex; Li, Jia; Shouse, Kate; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

How about if Steve takes his turn tomorrow and I'll take Thursday.

Charles Griffiths
National Center for Environmental Economics
Room 4334B, WJC West, Mail Code 1809T
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Phone: 202/566-2288 Fax: 202/566-2338
Email: griffiths.charles@epamail.epa.gov

From: Newbold, Steve
Sent: Tuesday, February 10, 2015 2:16 PM
To: Marten, Alex; Li, Jia; Shouse, Kate; Griffiths, Charles; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

I can start working on it tomorrow morning (or possibly this eve if someone else wants to take a quick crack at it first)

From: Marten, Alex
Sent: Tuesday, February 10, 2015 2:13 PM
To: Li, Jia; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Charles, Steve, Marcus, Kate any takers on the pen?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Tuesday, February 10, 2015 1:19 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: Re: SCC RTC Comments

Passing on my comments on top of Ann's for the next reviewer.

Thanks!

Jia

From: Marten, Alex
Sent: Monday, February 9, 2015 6:16 PM

To: Li, Jia; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

OK I think I may have figured it out. Jai try going into:

Options->Trust Center->Trust Center Settings->Privacy Options

And then uncheck the box "Remove personal information from file properties on save"

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Monday, February 09, 2015 5:59 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Alex:

Thanks! I have started the review and can add my comments to the version with Ann's comments next. One quick question: I noticed that the document automatically revert all changes to a generic "author" when saving changes to the document. Do you want us to identify ourselves in case you need to clarify or follow up on individual comments or edits? If so, any suggestion on how to change the option setting to do that? This may not be so important but will just be a little hard to keep track of different people's comments.

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 5:49 PM
To: Shouse, Kate; Li, Jia; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: SCC RTC Comments

Hi All,

I believe this is the correct list of staff who might be interested in reviewing the draft RTC. To avoid having to merge different sets of comments I am hoping we can stage the review. Ann took a first crack at this today and has added her comments in the attached. I believe Jia has the pen next.

I would like to have the staff review done by next Wednesday (2/18) COB to have time for management review. That gives one work day per person to get through this which should be enough as we are emphasizing, as Jim did on Friday, that this should be approached with a light touch to respect the large time commitment that is already in this version. Please focus on issues related to technical accuracy of the way in which the comments are represented and the response.

Thank you.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: McGartland, Al[McGartland.Al@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Tue 2/10/2015 8:27:41 PM
Subject: RE: Questions regarding 10:30 meeting tomorrow

Al,

Given this is only 30 min. I think that Joel framing the current situation and a dialogue could easily take up all the time. But I was planning to bring copies of a basic SCC background deck and the charge, just in case they were needed.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: McGartland, Al
Sent: Tuesday, February 10, 2015 2:56 PM
To: Fegley, Robert; Snyder, Brett
Cc: Grambsch, Anne; Marten, Alex
Subject: RE: Questions regarding 10:30 meeting tomorrow

Hi. The meeting is informational – there are things happening with the “Social Cost of Carbon” and Joel (and I) thought Tom should get a quick update in case he is asked about it and to solicit his advice and reactions **Non-Responsive** Though I want to stress the SCC is the product of a White House led workgroup (not an EPA driven effort).

Alex Marten (cc'd) is the best point person on this. (Elizabeth Kopits is out on maternity leave for 2.5 months.)

From: Fegley, Robert

Sent: Tuesday, February 10, 2015 2:48 PM
To: McGartland, Al; Snyder, Brett
Cc: Grambsch, Anne
Subject: Questions regarding 10:30 meeting tomorrow

Do either of you guys know about this meeting tomorrow and what is expected?

Tom Burke is the ORD AA-Designate and is apparently meeting with Joel tomorrow morning

From: Dannel, Mimi
Sent: Tuesday, February 10, 2015 2:27 PM
To: Fegley, Robert
Subject: Quick calendar item

Hello, Bob.

Can you or someone on your staff check with OP on the meeting tomorrow at 10:30 am on the social cost of carbon? Nathan wasn't sure if OP is providing advance materials. Since they haven't gotten any materials, the IOAA isn't sure if this is an informational meeting or if OP has a specific request of Tom Burke.

Thanks!

Mimi

To: Li, Jia[Li.Jia@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]
Cc: Wolverton, Ann[Wolverton.Ann@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 2/9/2015 11:16:31 PM
Subject: RE: SCC RTC Comments

OK I think I may have figured it out. Jai try going into:

Options->Trust Center->Trust Center Settings->Privacy Options

And then uncheck the box "Remove personal information from file properties on save"

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Monday, February 09, 2015 5:59 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Alex:

Thanks! I have started the review and can add my comments to the version with Ann's comments next. One quick question: I noticed that the document automatically revert all changes to a generic "author" when saving changes to the document. Do you want us to identify ourselves in case you need to clarify or follow up on individual comments or edits? If so, any

suggestion on how to change the option setting to do that? This may not be so important but will just be a little hard to keep track of different people's comments.

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 5:49 PM
To: Shouse, Kate; Li, Jia; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: SCC RTC Comments

Hi All,

I believe this is the correct list of staff who might be interested in reviewing the draft RTC. To avoid having to merge different sets of comments I am hoping we can stage the review. Ann took a first crack at this today and has added her comments in the attached. I believe Jia has the pen next.

I would like to have the staff review done by next Wednesday (2/18) COB to have time for management review. That gives one work day per person to get through this which should be enough as we are emphasizing,

Ex 5

Ex 5

the large time commitment that is already in this version. Please focus on issues related to technical accuracy of the way in which the comments are represented and the response.

Thank you.

--

Alex L. Marten

phone: (202) 566-2301
email: marten.alex@epa.gov

To: Li, Jia[Li.Jia@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Sarofim, Marcus[Sarofim.Marcus@epa.gov]
Cc: Wolverton, Ann[Wolverton.Ann@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 2/9/2015 11:14:17 PM
Subject: RE: SCC RTC Comments

Does anybody know how to change that behavior? I did a bit of googling and came up empty. I would be really useful to see who made what edits.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Li, Jia
Sent: Monday, February 09, 2015 5:59 PM
To: Marten, Alex; Shouse, Kate; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: RE: SCC RTC Comments

Alex:

Thanks! I have started the review and can add my comments to the version with Ann's comments next. One quick question: I noticed that the document automatically revert all changes to a generic "author" when saving changes to the document. Do you want us to identify ourselves in case you need to clarify or follow up on individual comments or edits? If so, any suggestion on how to change the option setting to do that? This may not be so important but will just be a little hard to keep track of different people's comments.

Jia

From: Marten, Alex
Sent: Monday, February 09, 2015 5:49 PM
To: Shouse, Kate; Li, Jia; Griffiths, Charles; Newbold, Steve; Sarofim, Marcus
Cc: Wolverton, Ann
Subject: SCC RTC Comments

Hi All,

I believe this is the correct list of staff who might be interested in reviewing the draft RTC. To avoid having to merge different sets of comments I am hoping we can stage the review. Ann took a first crack at this today and has added her comments in the attached. I believe Jia has the pen next.

I would like to have the staff review done by next Wednesday (2/18) COB to have time for management review. That gives one work day per person to get through this which should be enough as we are emphasizing,

Ex 5

Ex 5

the large time commitment that is already in this version. Please focus on issues related to technical accuracy of the way in which the comments are represented and the response.

Thank you.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]
Cc: Li, Jia[Li.Jia@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Mon 2/9/2015 10:00:32 PM
Subject: RE: SCC NAS Comms material

Ex 5

Ex 5

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Monday, February 09, 2015 3:48 PM
To: Marten, Alex
Cc: Li, Jia
Subject: RE: SCC NAS Comms material

Thanks, Alex, this looks good to me. I flagged a couple of minor things: (1)

Ex 5

Ex 5

Ex 5

(2) flagged a typo. They are in the attached and apologies, just realized that I saved it with the same name you gave it.

Also, was anyone able to verify the language about NAS panel meetings usually being closed? I believe that's how they work but didn't know for a fact and haven't tracked down a clear answer.

Thanks

Kate

From: Marten, Alex
Sent: Monday, February 09, 2015 2:34 PM
To: Shouse, Kate
Subject: SCC NAS Comms material

Hi Kate,

Attached is an updated version of the NAS SCC comms materials based on input from Alex. Would you mind taking a quick look before I send them over to EOP?

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Mon 2/9/2015 7:33:30 PM

Subject: SCC NAS Comms material

2015 02 09 SCC NAS comms materials v2.docx

Hi Kate,

Attached is an updated version of the NAS SCC comms materials based on input from Alex. Would you mind taking a quick look before I send them over to EOP?

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

To: Gilbreath, Jan[Gilbreath.Jan@epa.gov]

Bcc: **Personal cell/email**

From: Marten, Alex

Sent: Wed 2/4/2015 5:27:21 PM

Subject: CH4 benefits

marten et al - 2014 - incremental ch4 and n2o mitigation benefits consistent with the us governments sc-co2 estimates.pdf

2014 11 06 whitepaper on ch4 valuation in bca - review copy.pdf

Hi Jan,

Attached please find a copy of the journal article that presents the methodology and CH4 benefits estimates and the shorter whitepaper that summarizes the estimates and their application in regulatory analysis.

Ex 5

The whitepaper is not public, so please don't distribute.

Non-Responsive

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Wed 2/4/2015 2:04:25 PM

Subject: NRC Comms Materials

2015 02 03 SCC NAS comms materials.docx

Hi Kate,

Attached is my very rough start to comms materials as discussed yesterday. Please let me know what you think. I haven't made any progress on the Q and As yet, but will hopefully this morning.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Tue 2/3/2015 9:29:16 PM
Subject: FW: 2015 02 02 SCC Overview - alm.docx
2015 02 02 SCC Overview - alm.docx

Hi Kate,

Sorry for being so late w/ this. I got tied up after our call.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Barron, Alex
Sent: Tuesday, February 03, 2015 3:29 PM
To: Marten, Alex
Subject: 2015 02 02 SCC Overview - alm.docx

Two items.

To: Fawcett, Allen[Fawcett.Allen@epa.gov]; Shouse, Kate[Shouse.Kate@epa.gov]
Cc: McGartland, Al[McGartland.Al@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Tue 2/3/2015 3:04:02 PM
Subject: RE: SCC Check In This Morning
[2015 02 02 SCC RTC intro draft.docx](#)
[2015 01 30 script for NAS board meeting.docx](#)

FYI, after looking at the draft intro for the RTC Alex recommended a longer narrative. The attached update is my attempt at responding to his request. I haven't heard back as to whether this is what he was looking for, but the length/detail of this will likely be a discussion topic.

Also, Ex 5

Ex 5

I apologize for the short notice, but most of the text in both isn't completely new.

--

Alex L. Marten
phone: [\(202\) 566-2301](tel:(202)566-2301)
email: marten.alex@epa.gov

From: Fawcett, Allen
Sent: Tuesday, February 03, 2015 9:45 AM
To: Marten, Alex; Shouse, Kate
Cc: McGartland, Al
Subject: RE: SCC Check In This Morning

Thanks Alex, we'll be there.

Allen

From: Marten, Alex
Sent: Tuesday, February 03, 2015 9:33 AM
To: Fawcett, Allen; Shouse, Kate
Cc: McGartland, Al
Subject: SCC Check In This Morning

Allen and Kate,

Sorry for the short notice, but we are having a brief (30 min) SCC check in w/ Joel this morning at 10:30 in 3513 WJCN. If you would like to attend, or if Paul wanted to join, you would be welcome. I think the agenda will be focused on a status update of the different pieces.

Feel free to give me a call if you want more info.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Fri 1/30/2015 4:41:02 PM

Subject: RE: copy of intro
2015 01 29 SCC RTC intro draft.docx

Sure. The intro is attached.

My understanding is that EOP will send us a copy with their edits and the remainder fleshed out early next week. If he want to look at it over the weekend I think the version we sent them is fine.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Shouse, Kate

Sent: Friday, January 30, 2015 11:35 AM

To: Marten, Alex

Subject: copy of intro

Hi, Alex. Paul asked to see the RTC ahead of the IA mtg, could you please send me the introduction that you sent over yesterday? I have the email that you sent to Jim with the RTC draft, just want to add the intro excerpt too.

Thanks for sending news about Elizabeth. Funny timing,

Ex 6 - Other

Ex 6 - Other

To: Shouse, Kate[Shouse.Kate@epa.gov]
From: Marten, Alex
Sent: Fri 1/30/2015 2:19:07 AM
Subject: Re: intro to rtc

I'm sorry to hear about Allen, but I'm glad to hear that he is OK.

Thanks for going through this. Your edits are awesome! I accepted them and sent a copy on to Alex B. and Al, as Alex was interested in seeing this before we sent it on to OMB. I will let you know if they have any feedback.

My hope is to get it to Jim tomorrow so it can be incorporated before they pass an updated version of RTC back to us early next week.

P.S. I don't know how you and Elizabeth navigated the cross-jurisdictional nature of the SCC, but please let me know if I ever mess up.

Ex 6 - Other

--

Alex Marten
marten.alex@epa.gov

From: Shouse, Kate
Sent: Thursday, January 29, 2015 1:07 PM
To: Marten, Alex
Subject: RE: intro to rtc

Hi, Alex. Please see attached for some suggestions on the introduction, happy to discuss further. I'm not whetted to these edits specifically but do think it would be worthwhile to have some kind of statement linking the views of the comments and OMB's conclusion (see comment box for note about breakdown of comments into critical and supportive). FYI, Margo sent me the file with 36k names and the content of the form letter (attached and letter copied below).

On the NAS mtg questions, Allen is checking in with Paul to see if either he or Sarah would want to go, otherwise I'll likely represent OAR. I don't expect an answer today as

Ex 6 - Other

Ex 6 - Other

we need to sort it out today, let me know and I'll follow up with Paul directly.

Thanks!
Kate

Mass letter campaign:

"I believe in protecting the environment, and I believe in using science to make smart policy decisions. I support EDF for exactly this reason, and I applaud that OMB undertook in 2013 to raise the current estimate of the Social Cost of Carbon to \$37 per ton of carbon pollution. It's clearly only one step toward strong, science-based action on climate, but it is an important step."

From: Marten, Alex
Sent: Thursday, January 29, 2015 9:07 AM
To: Shouse, Kate
Subject: RE: intro to rtc

That's great. Thank you Kate.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Thursday, January 29, 2015 8:36 AM
To: Marten, Alex
Subject: Re: intro to rtc

Hi, Alex. Just wanted to let you know that i'm still working on some edits and won't be able to send back until later this morning or early pm (I have an appointment mid-morning, unfortunately). I think this is the right direction and I

Ex 5

Ex 5

Hope this doesn't hold you up too much,

Kate

From: Marten, Alex
Sent: Wednesday, January 28, 2015 2:31 PM
To: Shouse, Kate
Subject: intro to rtc

I'm struggling a bit w/ the intro section to the RTC that we had a place holder for. I've attached what I have been working with so far. If you have a moment I would be really interested in your thoughts. I welcome either specific edits or general comments

Ex 5

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

To: Shouse, Kate[Shouse.Kate@epa.gov]

Bcc: Personal cell/email

From: Marten, Alex

Sent: Thur 1/29/2015 8:17:35 PM

Subject: RE: model code

Correct.

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

From: Shouse, Kate

Sent: Thursday, January 29, 2015 2:40 PM

To: Marten, Alex

Subject: model code

Hi, Alex. Sorry to keep pestering you with this but want to make sure I'm providing accurate responses to the Stratus economist, David Chapman, seeking info on SCC. I sent him the replication instruction files and he's asked whether EPA is allowed to provide the actual code. I believe the answer is that for PAGE, he needs to contact Chris Hope directly to get the model but our zip file gives him instructions about how to use PAGE with our input files. FUND – zip file tells him how to download source code from Tol's site and the DICE code would be in the zipped up Matlab files?

Thanks,
Kate

From: David Chapman [<mailto:DChapman@stratusconsulting.com>]

Sent: Thursday, January 29, 2015 12:59 PM

To: Shouse, Kate

Cc: Fawcett, Allen

Subject: RE: Introduction

Kate,

Do you know if EPA is allowed to provide the actual code/programs from the three models (DICE, PAGE, FUND)?

Cheers,

David

From: Shouse, Kate [<mailto:Shouse.Kate@epa.gov>]

Sent: Wednesday, January 28, 2015 1:29 PM

To: David Chapman

Cc: Fawcett, Allen

Subject: RE: Introduction

Hi, David. Just wanted to close the loop and send you the requested scenarios. I have attached the replication instructions for each of the three models (DICE, FUND, PAGE). Each zip file has spreadsheets with the scenarios used in each model. The scenario spreadsheets are all based on the EMF scenarios but due to the different ways in which the models require input, some are more aggregated than others. Please let me know if you have any difficulty finding what you need here or if you have further questions – will connect you directly with the EPA folks who ran the models.

Thanks,
Kate

To: Sarofim, Marcus[Sarofim.Marcus@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Thur 1/29/2015 4:06:24 PM
Subject: RE: copy of the social cost of methane paper?
[marten et al - 2014 - incremental ch4 and n2o mitigation benefits consistent with the us governments sc-co2 estimates.pdf](#)

Non-Responsive

I'm assuming you mean the 2014 non-co2 paper attached and not the 2012 I wrote w/ Steve.

--

Alex L. Marten
phone: [\(202\) 566-2301](tel:(202)566-2301)
email: marten.alex@epa.gov

From: Sarofim, Marcus
Sent: Thursday, January 29, 2015 10:39 AM
To: Marten, Alex
Subject: copy of the social cost of methane paper?

Hi Alex,

Could you send me the final version of the Incremental CH4 and N2O mitigation benefits paper?

Thank you!

-Marcus

Non-Responsive

Marcus C. Sarofim, PhD
phone: 202-343-9993
WJC East 4410M
Environmental Scientist
Climate Science & Impacts Branch



To: Shouse, Kate[Shouse.Kate@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Wed 1/28/2015 6:14:01 PM
Subject: RE: SCC Letter Writing Campaign

Thanks.

--

Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: Shouse, Kate
Sent: Wednesday, January 28, 2015 1:00 PM
To: Marten, Alex
Subject: RE: SCC Letter Writing Campaign

That's a good question – I'm trying to track it down now (I searched for it by ID# in regulations.gov but didn't turn it up); going through some of the email traffic and will let you know what I find. I think it may have been submitted to OMB via email (versus uploading to regulations.gov) and a file got corrupted. Need to jump on a call but will turn back this afternoon. We may need to ask OMB (Margo Schwab) for a copy of the letter.

From: Marten, Alex
Sent: Wednesday, January 28, 2015 12:34 PM
To: Shouse, Kate
Subject: SCC Letter Writing Campaign

Hi Kate,

Do you happen to have a copy of the form letter from the SCC comments that had 36,000+ signatures?

--

Alex L. Marten

phone: (202) 566-2301

email: marten.alex@epa.gov

To: Evans, DavidA[evans.davida@epa.gov]; Sheriff, Glenn[Sheriff.Glenn@epa.gov]
Bcc: Personal cell/email
From: Marten, Alex
Sent: Tue 1/27/2015 2:18:01 PM
Subject: FW: 111b RIA Team
[Schedule as of 010915.pptx](#)
[Outline - Final 111b RIA.docx](#)

Non-Responsive

--
Alex L. Marten
phone: (202) 566-2301
email: marten.alex@epa.gov

From: CurryBrown, Amanda
Sent: Tuesday, January 27, 2015 7:34 AM
To: Deck, Leland; Shouse, Kate; Risley, David; Hutson, Nick; Evans, DavidA; Marten, Alex; Sheriff, Glenn; Fellner, Christian; Johnson, Mary
Cc: Lamson, Amy; Macpherson, Alex; Langdon, Robin; Weatherhead, Darryl
Subject: RE: 111b RIA Team

Hi All,

See attached for a couple of documents for our meeting this morning. The first is the latest version of the schedule that I have. The second is an outline for the 111b RIA.

Amanda

-----Original Appointment-----

From: CurryBrown, Amanda
Sent: Tuesday, January 20, 2015 11:12 AM
To: CurryBrown, Amanda; Deck, Leland; Shouse, Kate; Risley, David; Nick Hutson (Hutson.Nick@epa.gov); Evans, DavidA; Marten, Alex; Sheriff, Glenn; Fellner, Christian; Johnson, Mary
Cc: Lamson, Amy; Macpherson, Alex; Langdon, Robin; Weatherhead, Darryl
Subject: 111b RIA Team
When: Tuesday, January 27, 2015 10:30 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-OAQPS-919-541-4154-AQAD/Phone-Line/RTP-OAQPS-BLDG-C

Hi All,

I wanted to put some time on the calendar to touch base on plans for the 111b RIA. Please let me know if there are others who should be included.

Amanda